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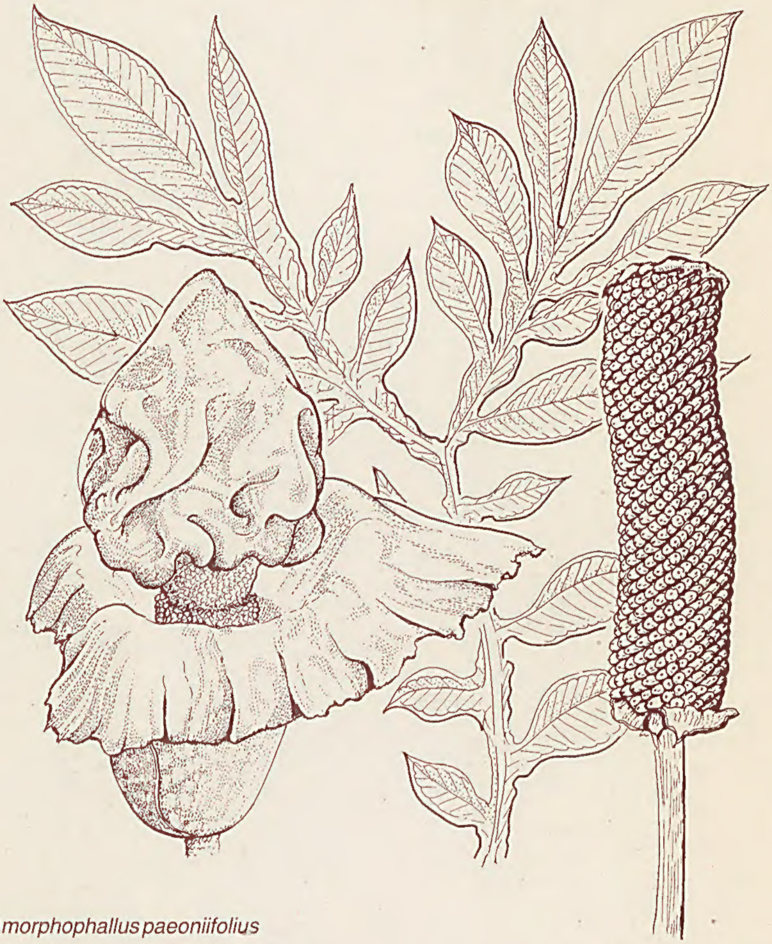

Amorphophallus paeoniifolius

NORTHERN TERRITORY BOTANICAL BULLETIN No. 12
CONSERVATION COMMISSION OF THE NORTHERN TERRITORY

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NORTHERN TERRITORY FLOWERING PLANTS: A KEY TO FAMILIES

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FOREWORD

The growing interest in the environment and the rapid expansion of secondary and tertiary education in the Northern Territory indicate the need for manuals to identify the elements of the Flora. To this end the Conservation Commission of the Northern Territory has been active in preparing and encouraging the publication of manuals dealing with the flora and fauna.

The key that follows has been designed to identify the families of flowering plants in the Northern Territory. Once identified in the key, the validity of the identity can be checked against the family description. The key and descriptions apply only to Northern Territory plants and so allow for less variation than is present in most families.

The key is several stages removed from, but is based on one written by Prof. A. Cayzer and used for many years in The University of Queensland (Cayzer, A. 1941, Laboratory Manual of Botany, Brisbane, Gvt Printer). The family descriptions are emended from those in "Keys to the Families and Genera of Queensland Flowering Plants" (Clifford, H.T. and Ludlow, G. 1978, Brisbane, University of Queensland Press). The emendments reflect the authors' experience of the flora and, in addition, they express their appreciation of the excellent descriptions in the "Flora of Australia" (Exec. Ed. A..S. George) published by Bureau of Flora and Fauna, Canberra.

NOTES ON THE USE OF KEYS

The efficient use of keys for determining families will be considerably facilitated if standard procedures are adopted, at least until the user is familiar with floral structures.

The most important step towards identifying any plant is to collect an adequate specimen, one possessing a vegetative shoot, flowers, and fruits. Until considerably experienced, the user is unlikely to know what attributes are required to identify the unknown plant and so should secure widely representative material.

At each stage of the key the user is required to answer one or more questions. If the structure concerned is small, a hand lens or binocular dissector should be used before making a decision. The following procedures are helpful for investigating floral structure.

(1) To determine placentation, cut a transverse section of the ovary or a very young fruit. With small ovaries the determination of placentation is tedious but nevertheless important because some families are regularly distinguished on the basis of the number of ovules and locules in the ovary.

(2) Before deciding whether the ovary is superior or inferior, whether the stamens are epipetalous or otherwise, whether the corolla tube or perianth is fused with the ovary at its base, cut a vertical section of the flower.

(3) To determine whether the stamens alternate with or are opposite the corolla lobes in gamopetalous flowers, cut the corolla tube down one side and lay it out flat.

(4) Dissect out the ovules before deciding which structure is the ovary.

(5) Flower buds should always be examined because they may exhibit structures missing from the mature flower. For example, the stamens may soon wither, as in the flowers of Bluebell (*Wahlenbergia* sp.) causing mature flowers to appear to be unisexual.

(6) Since both hairs and stipules may be deciduous their presence should always be determined from young shoots. The former presence of deciduous stipules may often be confirmed from a pair of scars on the stem adjacent to the base of the petiole.

(7) To decide whether a leaf or other organ is gland-dotted, examine it with a hand-lens or binocular dissector as seen in transmitted light. Glands when present appear as translucent dots, especially in the tissue between the veins.

Speed in the use of the keys will be enhanced if attention is given to remembering the abbreviations at the end of this chapter. In addition, it is important to understand some of the conventions employed in constructing the keys. The most important of these are as follows:

(1) The gynoecium is apocarpous when the ovaries are not fused, even though their styles may be united.

(2) The gynoecium is syncarpous when the ovaries are fused, even though the styles may be free.

(3) The gynoecium of flowers lacking a perianth is understood to be superior.

(4) In the keys A. refers to perfect stamens only.

(5) The stamens (A) are considered to be united even if only shortly fused at the base.

(6) For the identification of plants with unisexual flowers, the key relies mostly on the characters of the female or hermaphrodite flowers.

(7) Plants with weak stems are reterred to as climbing plants whether they merely twine around a support or develop special clasping organs.

(8) The keys refer always to the most commonly occurring state of any character under consideration. For example, it could be that on the one plant the majority of flowers possessed five petals and the remainder four or six petals. No attempt has been made to allow for the less common attribute states.

(9) Flowers are regarded as unisexual if either stamens or gynoecia are absent or represented only by remnants.

(10) The principal parts of the flowers are illustrated diagrammatically in the figure below.

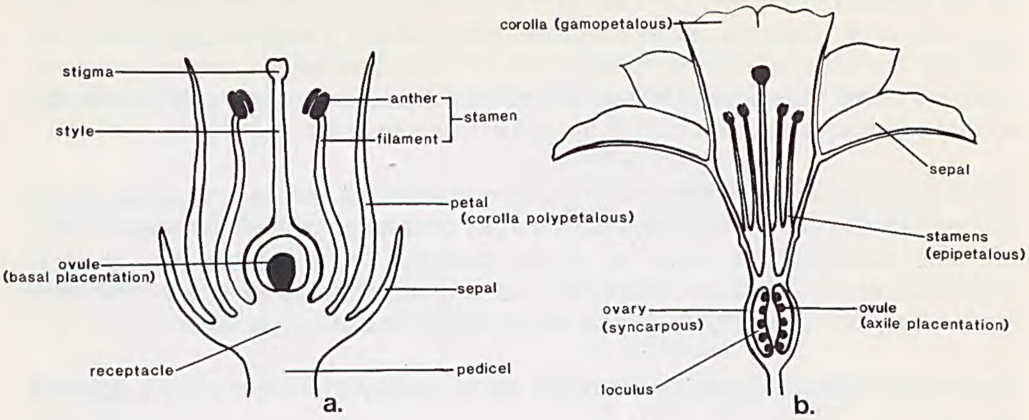

Fig 1: Principal Floral Organs
a. ovary superior
b. ovary inferior

The accuracy of identifications determined by use of the key should always be checked by reference to a family description. Those included herein apply only to the families as they are represented in the Northern Territory Flora and so except for small families are inapplicable elsewhere.

ABBREVIATIONS USED

A. - stamen(s)
a. - staminode(s)
C. - corolla or petal(s)
Fl., fl. - flower
Fld, fld - flowered
Fls, fls - flowers
foliate - referring to the number of leaflets possessed by a compound leaf
G. - gynoecium
K. - calyx or sepal(s)
Lf., lf. - leaf
locular - referring to the number of loculi
Lvs, lvs - leaves
merous- number of parts per floral whorl
P. - perianth
± - more or less
() - fused especially at base

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THE RECOGNITION OF MAGNOLIOPHYTA

The macroscopic features that distinguish flowering plants from other seed plants are their fruits and flowers. Amongst the diversity of flowers produced in the group many do not conform to the popular view of that structure being tiny and lacking colour. However, in all flowering plants the seeds are produced inside an ovary which, on maturity, develops into a one- or more-seeded fruit. Besides the flowers and fruits, flowering plants have several unique microscopic characters. In particular, the triploid endosperm and companion cells in the phloem set the group apart.

Within the flowering plants two major sections may be recognized. These are named according to the numbers of cotyledons usually possessed by their members. Those with one cotyledon are known as Monocotyledons and those with two or more cotyledons as Dicotyledons. Amongst the latter group a few species lack cotyledons or have only one due to fusion of the pair or loss of one of its members.

Some other common distinctions between the Monocotyledons and Dicotyledons are given below:

Character	Monocotyledon	Dicotyledon
Venation	convergent	reticulate
stipules	absent	common
leaf-base	sheathing	rarely sheathing

OUTLINE CLASSIFICATION OF THE FAMILIES OF NORTHERN TERRITORY MAGNOLIOPHYTA ACCORDING TO CRONQUIST (1981)

1. MAGNOLIATAE

Magnoliales
F. 1 Annonaceae
F. 2 Myristicaceae

Laurales
F. 3 Lauraceae
F. 4 Hernandiaceae

Piperales
F. 5 Piperaceae

Aristolochiales
F. 6 Aristolochiaceae

Nymphaeales
F. 7 Nelumbonaceae
F. 8 Nymphaeaceae
F. 9 Ceratophyllaceae

Ranunculales
F.10 Ranunculaceae
F.11 Menispermaceae

Papaverales
F.12 Papaveraceae

Urticales
F.13 Ulmaceae
F.14 Moraceae
F.15 Urticaceae

Casuarinales
F.16 Casuarinaceae

Caryophyllales
F.17 Nyctaginaceae
F.18 Aizoaceae

F.19 Cactaceae
F.20 Chenopodiaceae
F.21 Amaranthaceae
F.22 Portulacaceae
F.23 Molluginaceae
F.24 Caryophyllaceae

Polygonales
F.25 Polygonaceae

Plumbaginales
F.26 Plumbaginaceae

Dilleniales
F.27 Dilleniaceae

Theales
F.28 Theaceae
F.29 Elatinaceae
F.30 Clusiaceae

Malvales
F.31 Elaeocarpaceae
F.32 Tiliaceae
F.33 Sterculiaceae
F.34 Bombacaceae
F.35 Malvaceae

Lecythidales
F.36 Lecythidaceae

Nepenthales
F.37 Droseraceae

Violales
F.38 Flacourtiaceae
F.39 Bixaceae
F.40 Violaceae
F.41 Tamaricaceae
F.42 Frankeniaceae
F.43 Passifloraceae
F.44 Cucurbitaceae

Capparales
F.45 Capparaceae
F.46 Brassicaceae

Batales
F.47 Gyrostemonaceae
F.48 Bataceae

Ericales
F.49 Epacridaceae

Ebenales
F.50 Sapotaceae
F.51 Ebenaceae

Primulales
F.52 Myrsinaceae
F.53 Primulaceae

Rosales
F.54 Pittosporaceae
F.55 Byblidaceae
F.56 Crassulaceae
F.57 Chrysobalanaceae
F.58 Surianaceae

Fabales
F.59 Mimosaceae
F.60 Caesalpiniaceae
F.61 Fabaceae

Proteales
F.62 Proteaceae

Podostemales
F.63 Podostemaceae

Haloragales
F.64 Haloragaceae

Myrtales
F.65 Sonneratiaceae
F.66 Lythraceae
F.67 Thymelaeaceae
F.68 Onagraceae
F.69 Melastomataceae
F.70 Combretaceae
F.71 Myrtaceae

Rhizophorales
F.72 Rhizophoraceae

Santalales
F.73 Olacaceae
F.74 Opiliaceae

F.75 Santalaceae
F.76 Loranthaceae
F.77 Viscaceae

Celastrales
F.78 Celastraceae
F.79 Hippocrateaceae
F.80 Stackhousiaceae
F.81 Aquifoliaceae

Euphorbiales
F.82 Euphorbiaceae

Rhamnales
F.83 Rhamnaceae
F.84 Leeaceae
F.85 Vitaceae

Linales
F.86 Erythroxylaceae

Polygalales
F.87 Polygalaceae

Sapindales
F.88 Sapindaceae
F.89 Burseraceae
F.90 Anacardiaceae
F.91 Simaroubaceae
F.92 Meliaceae
F.93 Rutaceae
F.94 Zygophyllaceae

Geraniales
F. 95 Oxalidaceae
F. 96 Geraniaceae

Apiales
F. 97 Araliaceae
F. 98 Apiaceae

Gentianales
F. 99 Loganiaceae
F.100 Gentianaceae
F.101 Apocynaceae
F.102 Asclepiadaceae

Solanales
F.103 Solanaceae
F.104 Convolvulaceae
F.105 Cuscutaceae
F.106 Menyanthaceae
F.107 Hydrophyllaceae

Lamiales
F.108 Boraginaceae
F.109 Verbenaceae
F.110 Lamiaceae

Plantaginales
F.111 Plantaginaceae

Scrophulariales
F.112 Oleaceae
F.113 Scrophulariaceae
F.114 Myoporaceae
F.115 Orobanchaceae
F.116 Acanthaceae
F.117 Pedaliaceae
F.118 Bignoniaceae
F.119 Lentibulariaceae

Campanulales
F.120 Sphenocleaceae
F.121 Lobeliaceae
F.122 Stylidiaceae
F.123 Brunoniaceae
F.124 Goodeniaceae

Rubiales
F.125 Rubiaceae

Asterales
F.126 Asteraceae

2. LILIATAE

Alismatales
F.127 Limnocharitaceae
F.128 Alismataceae

Hydrocharitales
F.129 Hydrocharitaceae

Najadales
F.130 Aponogetonaceae
F.131 Juncaginaceae

F.132 Potamogetonaceae
F.133 Ruppiaceae
F.134 Najadaceae
F.135 Cymodoceaceae

Arecales
F.136 Arecaceae

Pandanales
F.137 Pandanaceae

Arales
F.138 Araceae
F.139 Lemnaceae

Commelinales
F.140 Xyridaceae
F.141 Commelinaceae

Eriocaulales
F.142 Eriocaulaceae

Restionales
F.143 Flagellariaceae
F.144 Restionaceae
F.145 Centrolepidaceae

Juncales
F.146 Juncaceae

Cyperales
F.147 Cyperaceae
F.148 Poaceae

Hydatellales
F.149 Hydatellaceae

Typhales
F.150 Typhaceae

Zingiberales
F.151 Zingiberaceae

Liliales
F.152 Philydraceae
F.153 Pontederiaceae
F.154 Haemodoraceae
F.155 Liliaceae
F.156 Iridaceae
F.157 Agavaceae
F.158 Xanthorrhoeaceae
F.159 Hanguanaceae
F.160 Taccaceae
F.161 Stemonaceae
F.162 Smilacaceae
F.163 Dioscoreaceae

Orchidales
F.164 Orchidaceae
F.165 Burmanniaceae

1. KEY TO THE FAMILIES OF MAGNOLIATAE

1.	Fls with P.	2
	Fls lacking P.	565
2.	One or both perianth whorls fused into a cap	3
	Perianth whorls not fused into a cap	5
3.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	4
4.	Tendrils present	F. 85 Vitaceae
	Tendrils absent	F. 45 Capparaceae
5.	P. segments more than 6 (counting K. and C. if both are present)	6
	P. segments 6 or fewer (counting K. and C. if both are present; do not interpret a pappus as a calyx)	388
6.	C. (or P.) polypetalous or polyphyllous	7
	C. (or P.) gamopetalous or gamophyllous	256
7.	Fls all 1-sexual	8
	Fls, at least some 2-sexual	28
8.	Ovary superior	9
	Ovary inferior	26
9.	Lvs whorled, much divided; floating aquatics	F. 9 Ceratophyllaceae
	Lvs alternate, opposite, or O; land plants	10
10.	G. apocarpous; carpels several, free	11
	G. syncarpous, or carpel 1	13
11.	(1) Climbers; lvs opposite	F. 93 Rutaceae
	(2) Climbers (in one species spreading over the ground); lvs alternate	F. 11 Menispermaceae
	(3) Non-climbers, non-spreading	12
12.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	F. 91 Simaroubaceae
13.	Lvs compound	14
	Lvs simple or absent	21
14.	C. 4	15
	C. 5	18

15.	A. 3-5 in male fls	16
	A. usually 8 in male fls	17
16.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	F. 91 Simaroubaceae
17.	(1) Lvs gland-dotted	F. 93 Rutaceae
	(2) Lvs not gland-dotted; wood with resin canals	F. 90 Anacardiaceae
	(3) Lvs not gland-dotted; wood lacking resin canals	F. 88 Sapindaceae
18.	A. 5 in male fls	F. 90 Anacardiaceae
	A. more than 5 in male fls	19
19.	A. usually 8; style 1; stigma entire or lobed	F. 88 Sapindaceae
	A. 10; styles or stigmas more than 1	20
20.	Ovary entire; stigmas glabrous	F. 90 Anacardiaceae
	Ovary lobed; stigmas plumose	F. 91 Simaroubaceae
21.	Lvs opposite or verticillate	22
	Lvs alternate, clustered, or absent	23
22.	(1) Fls strictly 1-sexual; fls enclosed in a fleshy receptacle (fig)	F. 14 Moraceae
	(2) Fls strictly 1-sexual; fls not enclosed	F. 82 Euphorbiaceae
	(3) Fls polygamous;	F. 30 Clusiaceae
23.	(1) Tendril climbers	F. 43 Passifloraceae
	(2) Twiners	F. 11 Menispermaceae
	(3) Not as in (1) and (2)	24
24.	(1) Styles 3, distinct, simple, or branched	F. 82 Euphorbiaceae
	(2) Style 1, with 2 or more stigmas; female fls with a.	F. 32 Tiliaceae
	(3) Style 1, with 2 or more stigmas; female fls without a.	F. 82 Euphorbiaceae
	(4) Style and stigma 1, or stigma sessile	25
	(5) Styles many	F. 47 Gyrostemonaceae
25.	(1) K. free; stigma almost sessile and simple; flowering and fruiting branches viscid	F. 82 Euphorbiaceae
	(2) K. united, hairy; shrubs or small trees almost or quite leafless; ovary stipitate with sessile stigma	F. 45 Capparaceae
	(3) K. united; ovary sessile; stigmas confluent; trees	F. 81 Aquifoliaceae
26.	Tendril climbers	F. 44 Cucurbitaceae
	Non-climbers	27

27.	Herbs or undershrubs; styles 2 or more	F. 64 Haloragaceae
	Trees; style 1	F. 4 Hernandiaceae
28.	G. apocarpous, with several free carpels	29
	G. syncarpous or carpel 1	50
29.	Fls perigynous	F. 56 Crassulaceae
	Fls hypogynous	30
30.	A. numerous	31
	A. 10 or fewer	36
31.	Lvs peltate	F. 8 Nymphaeaceae
	Lvs not peltate	32
32.	Climbers	33
	Non-climbers	34
33.	(1) K. 3, C. 6	F. 1 Annonaceae
	(2) K. 4, C. 3; K. 5, C. 4; or K. 5, C. 5	F. 27 Dilleniaceae
	(3) K. 4, C. 4	F. 10 Ranunculaceae
34.	P. 3 + 3 + 3	F. 1 Annonaceae
	P. otherwise	35
35.	(1) Herbs; lvs usually much incised	F. 10 Ranunculaceae
	(2) Trees, shrubs, or undershrubs; lvs entire	F. 27 Dilleniaceae
	(3) Trees; lvs 2-pinnate	F. 59 Mimosaceae
36.	Style 1, with 1 or more stigmas	37
	Styles (or stigmas when styles much reduced) free from one another, as many as there are carpels	40
37.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	38
38.	(1) Lvs alternate; stigmas 3 or more	F. 91 Simaroubaceae
	(2) Lvs opposite	F. 93 Rutaceae
40.	(1) Lvs simple or absent	41
	(2) Lvs compound, gland-dotted	F. 93 Rutaceae
	(3) Lvs compound, not gland-dotted	F. 91 Simaroubaceae
41.	Lvs opposite	F. 56 Crassulaceae
	Lvs alternate, radical, clustered, or absent	44
44.	(1) Fls 3-merous; usually K. 6, C. 6, G. 6 or 3	F. 11 Menispermaceae
	(2) Fls 4-merous	F. 56 Crassulaceae
	(3) Fls 5-merous	45

45.		A. united in a ring at the base	F. 27 Dilleniaceae
		A. free	46
46.		Plant leafless except at seedling stage	F. 29 Dilleniaceae
		Plant leafy	47
47.		Lvs absent at time of flowering	F. 90 Anacardiaceae
		Lvs present at time of flowering	48
48.		Lvs fleshy	F. 56 Crassulaceae
		Lvs not fleshy	49
49.	(1)	Shrubs or undershrubs; carpels usually 2-3	F. 27 Dilleniaceae
	(2)	Maritime shrubs; carpels 5	F. 58 Surianaceae
	(3)	Small or large trees	F. 91 Simaroubaceae
50.	(1)	C. 0; lvs not gland-dotted	F. 65 Sonneratiaceae
	(2)	C. 0; lvs gland-dotted	F. 71 Myrtaceae
	(3)	C. 3	51
	(4)	C. 4	52
	(5)	C. 5	98
	(6)	C. more than 5, or whole P. petaloid or sepaloid, sometimes in 1 whorl	231
51.		Lvs simple	F. 87 Polygalaceae
		Lvs compound	F. 60 Caesalpiniaceae
52.	(1)	K. 4, rarely 2-3	53
	(2)	K. 5	97
	(3)	K. 6	F. 66 Lythraceae
53.		Ovary superior	54
		Ovary inferior or semi-inferior	87
54.		Lvs radical or alternate	55
		Lvs opposite or verticillate	72
55.		Style 1, with 1 or more stigmas or stigma sessile	56
		Styles more than 1, quite free from one another	F. 37 Droseraceae
56.	(1)	A. 2	57
	(2)	A. 3	F. 60 Caesalpiniaceae
	(3)	A. 4, opposite C.	59
	(4)	A. 4, alternating with C.	58
	(5)	A. 6	62
	(6)	A. 7 or 8	63
	(7)	A. 10 or numerous	69

57.	Lvs simple, entire or much divided	F. 46 Brassicaceae
	Lvs compound	F. 60 Caesalpiniaceae
58.	Climbers with leaf-opposed tendrils	F. 85 Vitaceae
	Tendrils absent	F. 52 Myrsinaceae
59.	Lvs simple or absent	60
	Lvs compound	F. 45 Capparaceae
60.	Shrubs, trees or woody climbers	61
	Herbs	F. 46 Brassicaceae
61.	Lvs with short pointed lobes	F. 81 Aquifoliaceae
	Lvs quite entire	F. 78 Celastraceae
62.	A. tetradynamous; lvs simple	F. 46 Brassicaceae
	A. not tetradynamous; lvs usually compound	F. 45 Capparaceae
63.	A. free	64
	A. monadelphous	F. 92 Meliaceae
64.	Lvs simple or absent	65
	Lvs compound	66
65.	Lvs entire or absent	F. 73 Olacaceae
	Lvs dissected	F. 88 Sapindaceae
66.	Lvs 3-foliolate or palmate	67
	Lvs 1-pinnate	68
67.	Ovules 2 per loculus; stigmas 3-5	F. 89 Burseraceae
	Ovules numerous; stigma 1	F. 45 Capparaceae
68.	Ovules 2 per loculus	F. 89 Burseraceae
	Ovules 1 per loculus	F. 88 Sapindaceae
69.	Fls in heads or spikes; heads solitary or in racemes	F. 59 Mimosaceae
	Fls not in heads or spikes	70
70.	Ovary borne on long stalk (stipe)	F. 45 Capparaceae
	Ovary sessile	71
71.	A. with ring of glands at base; ovary 1-locular	F. 38 Flacourtiaceae
	A. without glands; ovary 4-locular	F. 31 Elaeocarpaceae
72.	(1) A. 2	73
	(2) A. 4	74
	(3) A. 5-8	77
	(4) A. 10 or more	36

73.	Fls in clusters, racemes, or panicles	F.112 Oleaceae
	Fls solitary in leaf axils	F. 66 Lythraceae
74.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	75
75.	(1) Fls hypogynous	76
	(2) Fls perigynous: anthers opening by pores: anther-connective with sickle-shaped appendages	F. 69 Melastomataceae
	(3) Fls perigynous: anthers opening longitudinally: connective without appendages	F. 66 Lythraceae
76.	Style 1	F. 78 Celastraceae
	Styles 4	F. 29 Elatinaceae
77.	Lvs simple or absent	78
	Lvs compound	84
78.	Lvs entire, or lobes more than 2	79
	Lvs 2-lobed	F. 94 Zygophyllaceae
79.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	80
80.	Ovary half-inferior; margins of C. fringed with long hairs	F. 72 Rhizophoraceae
	Ovary wholly superior; C. not fringed	81
81.	Style and stigma 1	82
	Styles or stigmas more than 1	F. 42 Frankeniaceae
82.	Ovule 1 per locule	F. 93 Rutaceae
	Ovules several per locule	83
83.	Lvs with 2 or more conspicuous longitudinal veins in addition to midrib	F. 69 Melastomataceae
	Midrib only conspicuous longitudinal vein	F. 66 Lythraceae
84.	A. free	85
	A. united	F. 92 Meliaceae
85.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	F. 94 Zygophyllaceae
86.	Styles 3-5	F. 30 Clusiaceae
	Style 1	F. 66 Lythraceae

87.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	88
88.	(1) A. more than 10; lvs opposite	F. 72 Rhizophoraceae
	(2) A. more than 10; lvs alternate	F. 36 Lecythidaceae
	(3) A. 10 or fewer	89
89.	Lvs alternate or radical	90
	Lvs opposite or verticillate	93
90.	Style 1; stigmas 1 or more	91
	Styles several, free	F. 64 Haloragaceae
91.	Style with 1 stigma	92
	Style with 4 stigmas	F. 68 Onagraceae
92.	Ovary 1-locular	F. 70 Combretaceae
	Ovary 4-locular	F. 68 Onagraceae
93.	Style 1; stigmas 1 or more	94
	Styles several	F. 64 Haloragaceae
94.	Margins of C. fringed with long hairs	F. 72 Rhizophoraceae
	Margins of C. not fringed	95
95.	Shrubs parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Not aerial parasites	96
96.	Ovary 1-locular	F. 69 Melastomataceae
	Ovary 4-locular	F. 68 Onagraceae
97.	Ovary 1-locular	F. 60 Caesalpiniaceae
	Ovary usually 3-locular	F. 88 Sapindaceae
98.	(1) K. 2	99
	(2) K. 3	102
	(3) K. 4	105
	(4) K. 5 or more, or cup-like with indistinct lobes, or entire in bud	106
99.	Fls actinomorphic	100
	Fls zygomorphic	F. 59 Fabaceae
100.	Herbs	101
	Shrubs or trees	F. 36 Lecythidaceae
101.	A. 5 or fewer: P. parts often scarious	F. 21 Amaranthaceae
	A. usually more than 5: lvs and often stems ± fleshy	F. 22 Portulacaceae

102.	Lvs simple or absent	103
	Lvs compound	F. 60 Caesalpiniaceae
103.	Lf venation palmate	F. 60 Caesalpiniaceae
	Lf venation not palmate	104
104.	A. 8	F. 87 Polygalaceae
	A. numerous, united	F. 36 Lecythidaceae
105.	A. 7-10, free or united	F. 60 Caesalpiniaceae
	A. numerous, united	F. 36 Lecythidaceae
106.	Ovary superior	107
	Ovary inferior, or semi-inferior	211
107.	Style 1 with simple stigma, or stigma sessile	108
	Styles or stigmas more than 1	170
108.	Lvs opposite or verticillate	109
	Lvs alternate, radical, or absent	122
109.	Lvs gland-dotted	110
	Lvs not gland-dotted	112
110.	Lvs simple	111
	Lvs compound	F. 93 Rutaceae
111.	Fls hypogynous	F. 93 Rutaceae
	Fls perigynous	F. 71 Myrtaceae
112.	Lvs simple	113
	Lvs compound	120
113.	Lvs with 2 or more conspicuous longitudinal veins in addition to midrib	F. 69 Melastomataceae
	Midrib only conspicuous longitudinal vein	114
114.	A. 10 or fewer	115
	A. more than 10	119
115.	Fls actinomorphic	116
	Fls zygomorphic	118
116.	Ovary superior	117
	Ovary semi-inferior	F. 66 Lythraceae
117.	(1) A. 3	F. 79 Hippocrateaceae
	(2) A. 5	F. 78 Celastraceae
	(3) A. usually 10	F. 72 Rhizophoraceae

118.	A. 5	F. 40 Violaceae
	A. 10	F. 59 Fabaceae
119.	(1) Fls hypogynous	F. 31 Elaeocarpaceae
	(2) Fls perigynous; fruit capsule; non-mangrove	F. 66 Lythraceae
	(3) Fls perigynous; fruit berry; mangrove	F. 65 Sonneratiaceae
120.	A. 5	F. 92 Meliaceae
	A. more than 5	121
121.	A. free	F. 94 Zygophyllaceae
	A. united	F. 59 Fabaceae
122.	(1) A. 1	123
	(2) A. 2-4	124
	(3) A. 5	126
	(4) A. 6-9 (rarely 5-10)	141
	(5) A. 10	144
	(6) A. numerous	160
123.	Lvs deeply emarginate and palmately veined	F. 60 Caesalpiniaceae
	Lvs quite entire and pinnately veined	F. 90 Anacardiaceae
124.	Lvs simple	125
	Lvs compound	F. 60 Caesalpiniaceae
125.	Lf venation well-marked and palmate	F. 60 Caesalpiniaceae
	Lf venation inconspicuous, or lvs absent	F. 73 Olacaceae
126.	Lvs simple or absent	127
	Lvs compound	136
127.	Lvs 2-fid at apex; venation palmate	F. 60 Caesalpiniaceae
	Lvs not 2-fid at apex	128
128.	(1) Herbs	129
	(2) Shrubs or trees; fls actinomorphic or nearly so	130
	(3) Small shrubs; fls zygomorphic	F. 40 Violaceae
129.	Fls actinomorphic; lvs with glandular hairs	F. 55 Byblidaceae
	Fls zygomorphic	F. 40 Violaceae
130.	Climbers	131
	Non-climbers, ± erect	132
131.	Twiners	F. 71 Opiliaceae
	Climbers with leaf-opposed tendrils	F. 85 Vitaceae

132.	(1) A. opposite C.	133
	(2) A. opposite K.; lvs not gland-dotted	135
	(3) A. opposite K.; lvs gland-dotted	F. 93 Rutaceae
133.	Each A. ± enclosed by small hood-shaped C.	F. 83 Rhamnaceae
	A. not enclosed by C.	134
134.	Stamens free, alternating with disk lobes	F. 71 Opiliaceae
	Stamens connate at base, disk absent	F. 33 Sterculiaceae
135.	K. usually free: C. free or connate: no disc: ovary 1-2 locular, with few or many ovules	F. 54 Pittosporaceae
	K. free: ovary immersed in conspicuous disc: ovary 3-locular, with many ovules or K. free: ovary 1-2 locular, with ovules solitary	F. 78 Celastraceae
136.	Climbers with leaf-opposed tendrils	F. 85 Vitaceae
	Non-climbers, or, if climbing, tendrils not leaf-opposed or tendrils absent	137
137.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	138
138.	(1) A. 5 + a. 5: herbs, usually prostrate	F. 94 Zygophyllaceae
	(2) A. 5 free, without a.	139
	(3) A. (5) without a.	140
139.	Ovary 1-locular; lvs 2-pinnate	F. 59 Mimosaceae
	Ovary 3-5 locular; lvs 1-pinnate	F. 92 Meliaceae
140.	Lvs 1-pinnate	F. 92 Meliaceae
	Lvs 2- or 3-pinnate	F. 85 Vitaceae
141.	A. free	142
	A. (9)	F. 61 Fabaceae
142.	Lvs simple	F. 61 Fabaceae
	Lvs compound	143
143.	Ovary 1-locular	F. 60 Caesalpiniaceae
	Ovary 2-or-more locular	F. 88 Sapindaceae
144.	Fls actinomorphic or nearly so	145
	Fls markedly zygomorphic	F. 61 Fabaceae
145.	A. united or all but 1 united	146
	A. free	148

146.	(1) Lvs simple	147
	(2) Lvs 1-pinnate; ovary 2-5-locular	F. 92 Meliaceae
	(3) Lvs 1-pinnate; ovary 1-locular	F. 61 Fabaceae
	(4) Lvs 2-3 pinnate; ovary 5-locular; ovules 2 per loculus	F. 92 Meliaceae
	(5) Lvs 2-pinnate; ovary 1-locular; ovules 3 or more	F. 59 Mimosaceae
147.	Staminal tube long and narrow, surrounding style	F. 92 Meliaceae
	Staminal tube short, open, cup-like	F. 33 Sterculiaceae
148.	Lvs simple	149
	Lvs compound	154
149.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	150
150.	Style inserted near base of ovary	F. 91 Simaroubaceae
	Style terminal	151
151.	Ovary and back of C. covered with scales; fls in heads or clusters at end of branchlets	F. 93 Rutaceae
	Not as above	152
152.	Fls perigynous; ovary enclosed in K. tube; A. on K. tube, sometimes low down	F. 66 Lythraceae
	Not as above; fls hypogynous	153
153.	Ovary usually stipitate; ovules several; K. united	F. 60 Caesalpiniaceae
	Ovary sessile; ovule 1; K. usually free	F. 90 Anacardiaceae
154.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	155
155.	Herbs	F. 94 Zygophyllaceae
	Shrubs, trees or woody climbers	156
156.	(1) Lvs 2-pinnate; petals valvate	F. 59 Mimosaceae
	(2) Lvs pinnate; leaflets 2;	F. 60 Caesalpiniaceae
	(3) Lvs pinnate; leaflets more than 2;	157
157.	Ovary 1-locular	158
	Ovary 2-or-more locular	159
158.	Ovule 1	F. 90 Anacardiaceae
	Ovules more than 1	F. 60 Caesalpiniaceae
159.	Ovary 1- or 3-locular; ovules usually 1 per loculus	F. 88 Sapindaceae
	Ovary 4-5-locular; ovules 2 per loculus	F. 89 Burseraceae

160.	Lvs gland-dotted	161
	Lvs not gland-dotted	162
161.	Ovary superior	F. 93 Rutaceae
	Ovary semi-inferior	F. 71 Myrtaceae
162.	Lvs simple or absent	163
	Lvs compound	169
163.	(1) A. free, or only slightly united at base	164
	(2) A. united into 5 or 10 groups	F. 32 Tiliaceae
	(3) A. united into single group	168
164.	Fls small, in globular heads or cylindrical spikes; A. much exserted	F. 59 Mimosaceae
	Fls not as above; A. usually not exserted	165
165.	Fls hypogynous	166
	Fls perigynous	F. 66 Lythraceae
166.	(1) Lvs fleshy, entire; shrubs	F. 94 Zygophyllaceae
	(2) Lvs not fleshy, entire or pinnately toothed or lobed; shrubs or trees	167
	(3) Lvs palmately divided into 5 or 7 lobes; small trees	F. 39 Bixaceae
167.	A. dehiscing longitudinally	F. 32 Tiliaceae
	A. dehiscing by pores or slits	F. 31 Elaeocarpaceae
168.	Staminal tube with numerous anthers; staminal tube as long or nearly as long as style; anthers 1-locular	F. 35 Malvaceae
	Staminal tube with few anthers: staminal tube short; anthers 2-locular	F. 33 Sterculiaceae
169.	Lvs 1- or 2-pinnate	F. 59 Mimosaceae
	Lvs palmate	F. 39 Bixaceae
170.	Lvs simple or absent	171
	Lvs compound	203
171.	Lvs opposite or verticillate	172
	Lvs alternate, radical, or absent	185
172.	A. 10 or fewer	173
	A. numerous	F. 30 Clusiaceae

173.	Styles or stigmas 5	174
	Styles or stigmas less than 5	179
174.	(1) Lvs verticillate	175
	(2) Lvs opposite, gland-dotted	F. 93 Rutaceae
	(3) Lvs opposite, not gland-dotted	176
175.	Plants floating aquatics without roots	F. 37 Droseraceae
	Plants not aquatic	F. 24 Caryophyllaceae
176.	Styles 5, separate	177
	Style 1, with 5 stigmas	178
177.	Ovary 2-5-locular	F. 29 Elatinaceae
	Ovary 1-locular	F. 24 Caryophyllaceae
178.	Stems swollen at nodes; ovary 1-locular	F. 24 Caryophyllaceae
	Stems not swollen at nodes; ovary 3-or-more locular	F. 96 Geraniaceae
179.	Styles free	180
	Styles united, with 2 or more stigmas	182
180.	Lvs gland-dotted	F. 30 Clusiaceae
	Lvs not gland-dotted	181
181.	Seeds endospermic, leaf margins entire	F. 24 Caryophyllaceae
	Seeds lacking endosperm, leaf margins serrate	F. 29 Elatinaceae
182.	Herbs, non-climbers, non-twiners	F. 24 Caryophyllaceae
	Shrubs, trees, or climbers and twiners	183
183.	A. 3	F. 79 Hippocrateaceae
	A. 5 or 6	184
184.	(1) A. 5,opposite to and enclosed in C.	F. 83 Rhamnaceae
	(2) A. opposite K.; claws of C. cohering in angular tube	F. 42 Frankeniaceae
	(3) A. opposite K.; C. sessile, or claws, if present, free	F. 78 Celastraceae
185.	A. united in a cup at the base or forming a conspicuous staminal tube	186
	A. free, or arising from margin of a small disc	190
186.	Styles 2 or more, free	187
	Style 1, with 2 or more stigmas	188

187.	A. 5, 10, or numerous	F. 33 Sterculiaceae
	A. 8	F. 23 Molluginaceae
188.	C. attached to base of staminal column; A. tube usually long; A. usually numerous (rarely 10 or fewer); stigmas usually 5 (occasionally fewer or up to 10); herbs, shrubs, or trees	F. 35 Malvaceae
	Not as above	189
189.	(1) A. 5 usually with alternating a.; herbs or shrubs; lvs often with stellate hairs	F. 33 Sterculiaceae
	(2) A. 10, usually 3 or 4 without anthers	F. 96 Geraniaceae
	(3) A. 10 or numerous, sometimes with a.; lvs often with stellate hairs	F. 33 Sterculiaceae
190.	(1) A. 1-3	F. 32 Tiliaceae
	(2) A. 5	191
	(3) A. 6-10	200
	(4) A. numerous	F. 32 Tiliaceae
191.	Climbers with axillary tendrils	192
	Non-climbers, or climbers without axillary tendrils	193
192.	Corona present within C.	F. 43 Passifloraceae
	No corona present	F. 26 Plumbaginaceae
193.	Styles 2 or more, free	194
	Style 1, with 2 or more stigmas	197
194.	A. opposite C.	195
	A. alternating with C.	196
195.	Styles 5	F. 26 Plumbaginaceae
	Styles less than 5	F. 83 Rhamnaceae
196.	Lvs with conspicuous glandular hairs	F. 37 Droseraceae
	Lvs small, appressed on stem	F. 41 Tamaricaceae
197.	Lvs small, appressed on stem	F. 41 Tamaricaceae
	Lvs not appressed on stem	198
198.	A. opposite C.	F. 83 Rhamnaceae
	A. alternating with C.	199
199.	(1) Herbs; A. 5	F. 80 Stackhousiaceae
	(2) Herbs; A. 5 + a. 5	F. 96 Geraniaceae
	(3) Shrubs or trees	F. 78 Celastraceae

200.	A. 8, 6 of them attached to base of C.	F. 87 Polygalaceae
	A. all hypogynous or perigynous	201
201.	A. 10, all with anthers	202
	A. 7-10; if A. 10, some without anthers	F. 96 Geraniaceae
202.	(1) Style 1, with 2 or more stigmas	F. 96 Geraniaceae
	(2) Styles several; ovary 1-celled	F. 90 Anacardiaceae
	(3) Styles several carpels; ovary 5-celled	F. 58 Surianaceae
203.	Lvs alternate or radical	204
	Lvs opposite	210
204.	Styles or sessile stigmas free	205
	Style 1, with 2 or more stigmas	208
205.	Herbs	206
	Shrubs or trees	207
206.	A. 5	F. 37 Droseraceae
	A. 10	F. 95 Oxalidaceae
207.	Styles 2; leaflets 2, rarely one	F. 88 Sapindaceae
	Styles more than 2, if 2 the leaflets more than 2	F. 90 Anacardiaceae
208.	(1) A. 3 + a. 5; style petaloid	F. 60 Caesalpiniaceae
	(2) A. 5, no. a.	F. 90 Anacardiaceae
	(3) A. 5, alternating with 5 usually scale-like a.	F. 96 Geraniaceae
	(4) A. more than 5	209
209.	(1) A. 6-9; stigmas not plumose	F. 88 Sapindaceae
	(2) A. 10; stigmas plumose	F. 91 Simaroubaceae
	(3) A. more than 10	F. 34 Bombacaceae
210.	Herbs; style simple with 1-5 sessile stigmas	F. 94 Zygophyllaceae
	Herbs or small shrubs; style with 5 short stigmatic branches	F. 96 Geraniaceae
211.	A. 5	212
	A. more than 5	221
212.	A. opposite C.	213
	A. alternating with C.	215
213.	Shrubs parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Plants not parasitic	214
214.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	F. 83 Rhamnaceae

215.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	216
216.	Herbs (non-climbing, non-twining)	217
	Shrubs or trees, sometimes climbing or twining	218
217.	Fls in umbels or heads; styles or stigmas 2	F. 98 Apiaceae
	Fls not in umbels or heads; style and stigma 1	F. 68 Onagraceae
218.	(1) Fls in umbels	219
	(2) Fls not in umbels; lvs compound	F. 97 Araliaceae
	(3) Fls not in umbels; lvs simple	F. 70 Combretaceae
219.	Lvs entire	220
	Lvs divided or compound	F. 97 Araliaceae
220.	Stipules usually present; epigynous disc entire	F. 97 Araliaceae
	Stipules absent: epigynous disc 2-lobed	F. 98 Apiaceae
221.	Lvs gland-dotted	222
	Lvs not gland-dotted	224
222.	A. numerous or A. 10 with alternating a.	F. 71 Myrtaceae
	A. 10 or fewer; no a.	223
223.	Ovary 1-locular	F. 70 Combretaceae
	Ovary 2-or-more locular	F. 71 Myrtaceae
224.	Lvs alternate, radical, or absent	225
	Lvs opposite	228
225.	Lvs simple	226
	Lvs compound	F. 38 Flacourtiaceae
226.	Style and stigma 1	227
	Styles or stigmas more than 1	F. 90 Anacardiaceae
227.	Herb	F. 68 Onagraceae
	Shrubs (sometimes climbing) or trees	F. 70 Combretaceae
228.	Lvs with several conspicuous longitudinal veins	F. 69 Melastomataceae
	Midrib only conspicuous longitudinal vein	229
229.	One lf of pair much larger than other; anthers with conspicuous appendages	F. 69 Melastomataceae
	Lvs of pairs equal: anthers without appendages	230

230.	Ovary 1-locular	F. 70 Combretaceae
	Ovary 2-or more-locular	F. 72 Rhizophoraceae
231.	(1) K. 2; style short or none; stigmas usually confluent	F. 12 Papaveraceae
	(2) K. 2; styles several, free, or style 1 with several stigmas; plants ± fleshy	F. 22 Portulacaceae
	(3) K. more than 2, or whole P.petaloid or sepaloid	232
232.	(1) Ovary superior	233
	(2) Ovary inferior	244
	(3) Ovary half-inferior	F. 66 Lythraceae
233.	Herbs with floating or submerged lvs	F. 8 Nymphaeaceae
	Herbs (not aquatic), shrubs, or trees	234
234.	Lvs alternate	235
	Lvs opposite or verticillate	241
235.	Climbers	236
	Non-climbers	238
236.	Climbers with tendrils	F. 43 Passifloraceae
	Climbers without tendrils	237
237.	Branches spiny	F. 19 Cactaceae
	Branches not spiny	F. 11 Menispermaceae
238.	A. 1 perfect and much longer than the others, with usually 4 or more imperfect A.	F. 90 Anacardiaceae
	A. 5 or more	239
239.	Lvs simple or absent	240
	Lvs compound	F. 59 Mimosaceae
240.	(1) Herbs	F. 21 Amaranthaceae
	(2) Shrubs or trees; seeds endospermic	F. 38 Flacourtiaceae
	(3) Shrubs or trees; seeds lacking endosperm	F. 88 Sapindaceae
241.	Ovary 3-6 locular	242
	Ovary 10-15 locular	F. 65 Sonneratiaceae
242.	Lvs with 5-7 conspicuous longitudinal veins	F. 69 Melastomataceae
	Midrib only conspicuous longitudinal vein	243
243.	A. on the K. tube; anthers opening longitudinally	F. 66 Lythraceae
	A. at base of K.; anthers opening by terminal pores	F. 69 Melastomataceae

244.	Aquatic herbs	F. 8 Nymphaeaceae
	Herbs (not aquatic), shrubs, or trees	245
245.	(1) Lvs alternate or clustered	246
	(2) Lvs opposite	251
	(3) Lvs absent or very deciduous	F. 19 Cactaceae
246.	Branches spiny	F. 19 Cactaceae
	Branches without spines	247
247.	Shrubs parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Plants not parasitic	248
248.	Lvs fleshy	F. 18 Aizoaceae
	Lvs not fleshy	249
249.	Lvs simple	250
	Lvs palmate	F. 97 Araliaceae
250.	(1) Lvs stipulate; fruit dry or drupaceous	F. 70 Combretaceae
	(2) Lvs exstipulate; fruit berry	F. 38 Flacourtiaceae
	(3) Lvs, exstipulate; fruit nut-like	F. 71 Myrtaceae
251.	Lvs fleshy; stigmas 5	F. 18 Aizoaceae
	Lvs not fleshy; stigmas 1 or 2	252
252.	(1) C. absent; lvs gland-dotted	F. 71 Myrtaceae
	(2) C. absent; lvs not gland-dotted	F. 65 Sonneratiaceae
	(3) C. present	253
253.	Lvs with 5-7 conspicuous longitudinal veins	F. 69 Melastomataceae
	Midrib only conspicuous longitudinal vein	254
254.	K. and C. each numerous	F. 72 Rhizophoraceae
	K. and C. each less than 10	255
255.	Ovary 1-locular, ovules about 10	F. 70 Combretaceae
	Ovary 2-5 locular, ovules 1-2 per loculus	F. 72 Rhizophoraceae
256.	Fls all 1-sexual	257
	Fls at least some 2-sexual	265
257.	Lvs opposite	258
	Lvs alternate	259
258.	Ovary superior	F.110 Lamiaceae
	Ovary inferior	F.125 Rubiaceae

259.	P. in 2 whorls	260
	P. in 1 whorl	F. 97 Araliaceae
260.	K. 4; C. 4	261
	K. and C. each 5 or more	262
261.	Climbers	F. 11 Menispermaceae
	Non-climbers	F. 51 Ebenaceae
262.	Ovary superior	263
	Ovary inferior	264
263.	(1) P. in 2 series of K. and C.; A. 5 in male fls	F. 73 Olacaceae
	(2) P. in 2 series of K. and C.; A. usually 10 in male fls	F. 51 Ebenaceae
	(3) P. in 2 series of K. and C.; A. about 100 in male fls	F. 28 Theaceae
	(4) P. in 1 series of about 8 unequal lobes	F. 82 Euphorbiaceae
264.	Plants with tendrils, usually climbers, sometimes prostrate	F. 44 Cucurbitaceae
	Plants without tendrils, ± erect	F. 121 Campanulaceae
265.	Ovary superior	266
	Ovary inferior or half-inferior	373
266.	(1) A. 1	F. 63 Podostemaceae
	(2) A. 2	267
	(3) A. 4	279
	(4) A. 5	309
	(5) A. more than 5	361
267.	Ovary entire or slightly lobed	268
	Ovary divided into free or nearly free segments (usually 4)	F. 110 Lamiaceae
268.	Fls actinomorphic	269
	Fls zygomorphic	273
269.	Lvs simple, unifoliolate or absent	270
	Lvs trifoliolate	F. 112 Oleaceae
270.	(1) C. lobes 4	F. 112 Oleaceae
	(2) C. lobes 5	271
	(3) C. lobes more than 5	F. 112 Oleaceae
271.	(1) Herbs	F. 113 Scrophulariaceae
	(2) Shrubs or undershrubs	272
	(3) Climbers	F. 112 Oleaceae
272.	(1) Fls in long spikes	F. 109 Verbenaceae

	(2) Fls not in spikes; style minutely notched at top	F. 112 Oleaceae
	(3) Fls not in spikes; style deeply bifid	F. 109 Verbenaceae
273.	Bracteoles large, ± covering K.	F. 116 Acanthaceae
	Bracteoles absent or small	274
274.	K. divided into 2 lobes or segments	275
	K. divided into more than 2 lobes or segments	276
275.	Herbs or shrubs with opposite lvs	F. 109 Verbenaceae
	Herbs with alternate or radical lvs, or lvs 0; aquatic or marsh plants.	F. 119 Lentibulariaceae
276.	Lvs radical or alternate	F. 103 Solanaceae
	Lvs opposite or whorled	277
277.	(1) K. 4; C. (4), C. lobes indistinct, or C. 2-lipped	F. 113 Scrophulariaceae
	(2) K. (4); C. (5); fls in long spikes terminal on branches	F. 109 Verbenaceae
	(3) K. 5 or (5); C. (5); ovary 2-locular; placentation axile	278
278.	Herbs, usually annual	F. 113 Scrophulariaceae
	Shrubs or small trees	F. 116 Acanthaceae
279.	Ovary divided into (usually 4) separate segments	280
	Ovary entire or lobed	281
280.	Style gynobasic, rarely terminal	F. 110 Lamiaceae
	Style terminal	F. 109 Verbenaceae
281.	Fls actinomorphic or nearly so	282
	Fls zygomorphic	297
282.	(1) Lvs alternate, 2-pinnate	F. 59 Mimosaceae
	(2) Lvs alternate, not 2-pinnate	283
	(3) Lvs opposite or verticillate	289
	(4) Lvs radical; K. 4: C. (4)	F. 111 Plantaginaceae
	(5) Lvs radical; K. 5: C. (5)	F. 116 Acanthaceae
283.	(1) C. lobes 3	F. 87 Polygalaceae
	(2) C. lobes 4	284
	(3) C. lobes 5	287
284.	A. alternating with C. lobes	285
	A. opposite the C. lobes	286
285.	Twining plants; perennials	F. 104 Convolvulaceae
	Prostrate plants; annuals	F. 108 Boraginaceae

286.	Ovary 1-locular; ovules several	F. 52 Myrsinaceae
	Ovary 2-locular, ovule 1 per loculus	F. 50 Sapotaceae
287.	Anthers connivent in a cone round the style	F. 103 Solanaceae
	Anthers not connivent	288
288.	Fruit a drupe	F. 114 Myoporaceae
	Fruit a capsule or berry	F. 103 Solanaceae
289.	K. 4	290
	K. 5 or more, or K. 2-lipped or truncate	293
290.	(1) Ovary 1-locular, with 2 parietal placentas	F. 100 Gentianaceae
	(2) Ovary 2-locular	291
	(3) Ovary 4-locular	F. 109 Verbenaceae
291.	Herbs	292
	Shrubs or trees	F. 99 Loganiaceae
292.	(1) Lvs opposite; ovary quite superior	F. 99 Loganiaceae
	(2) Lvs opposite; ovary half-inferior	F. 125 Rubiaceae
	(3) Lvs usually in whorls of 3	F. 113 Scrophulariaceae
293.	C. 4-lobed	F. 109 Verbenaceae
	C. 5-lobed	294
294.	Lvs simple or absent	295
	Lvs compound	F. 118 Bignoniaceae
295.	Bracteoles large and ± enclosing K.	F. 116 Acanthaceae
	Bracteoles 0, or not enclosing K.	296
296.	(1) Ovary 2-locular; ovules several per loculus	F. 113 Scrophulariaceae
	(2) Ovary 2-locular; ovules numerous per loculus	F. 118 Bignoniaceae
	(3) Ovary 4-locular; 1 ovule per 1-loculus	F. 109 Verbenaceae
297.	(1) Lvs all simple, sometimes reduced to scales	298
	(2) Upper lvs simple, lower lvs compound	F. 117 Pedaliaceae
	(3) Lvs mostly in whorls of 3, simple or 1-pinnate with 3-7 leaflets; ovary 2-locular, with numerous ovules; small trees	F. 118 Bignoniaceae
	(4) Lvs very variable, simple or with 3 or 5 leaflets, lvs opposite; ovary 2-locular, with 1-2 ovules per loculus	F. 109 Verbenaceae
	(5) Lvs all compound	306

298.	(1) Lvs radical	F. 113 Scrophulariaceae
	(2) Upper lvs alternate, lower lvs opposite; ovary 2-locular	F. 113 Scrophulariaceae
	(3) Upper lvs alternate, lower lvs opposite; ovary 4-locular	F. 117 Pedaliaceae
	(4) Lvs or scales all alternate	299
	(5) Lvs all opposite or verticillate	302
299.	K. 3 + 2, C. (3)	F. 87 Polygalaceae
	K. 5, C. (5); or K. (5), C. (5)	300
300.	(1) Ovary 1-locular	F. 115 Orobanchaceae
	(2) Ovary 2-locular	301
	(3) Ovary 4-locular	F. 114 Myoporaceae
301.	(1) Herbs (sometimes climbers); occasionally shrubs; C. usually zygomorphic	F. 113 Scrophulariaceae
	(2) Herbs or shrubs; C. usually actinomorphic; ovules numerous; fruit capsule	F. 103 Solanaceae
	(3) Shrubs or small trees; style with 2 stigmas; ovules few per loculus; fruit berry	F. 103 Solanaceae
	(4) Shrubs or small trees; stigma 1; ovules 1 or 2 per loculus; fruit drupe	F. 114 Myoporaceae
302.	Ovary divided into 4 nearly separate segments at maturity; style gynobasic, rarely terminal	F. 110 Lamiaceae
	Ovary simple or lobed	303
303.	(1) Ovary 2-locular	304
	(2) Ovary 4-locular	F. 109 Verbenaceae
	(3) Ovary 8-locular	F. 117 Pedaliaceae
304.	Bracteoles conspicuous, often ± covering K.	F. 116 Acanthaceae
	Bracteoles small or absent	305
305.	(1) Undershrubs or shrubs, rarely trees; ovules 1 or 2 per loculus	F. 109 Verbenaceae
	(2) Herbs or small shrubs; ovules 2 or more per loculus	F. 113 Scrophulariaceae
	(3) Small or large trees; ovules numerous	F. 118 Bignoniaceae
306.	Climbers, usually woody	F. 118 Bignoniaceae
	Shrubs or trees	307
307.	(1) Lvs with 3 leaflets: fifth A. present as a.	F. 118 Bignoniaceae
	(2) Lvs with 3 leaflets: no rudiment of fifth A.	F. 109 Verbenaceae
	(3) Lvs with more than 3 leaflets	308

308.	Leaflets 5; ovules 2 per loculus	F. 109 Verbenaceae
	Leaflets 5 or more; ovules more than 2 per loculus	F. 118 Bignoniaceae
309.	Latex present	310
	Latex absent	316
310.	(1) Lvs alternate	311
	(2) Lvs opposite or verticillate	315
	(3) Lvs absent	F. 102 Asclepiadaceae
311.	Twiners	F. 104 Convolvulaceae
	Non-twiners	312
312.	Fls actinomorphic	313
	Fls zygomorphic	F. 121 Lobeliaceae
313.	Anthers connivent round or above stigma	F. 101 Apocynaceae
	Anthers free	314
314.	A. alternating with C. lobes	F. 104 Convolvulaceae
	A. opposite C. lobes	F. 50 Sapotaceae
315.	Anthers usually united round or above stigma; A. filaments free from one another	F. 101 Apocynaceae
	Anthers not united round or above stigma	F. 102 Asclepiadaceae
316.	G. apocarpous, or divided into 2 or more free segments at maturity	317
	G. syncarpous, ovary entire or lobed, or carpel 1	319
317.	(1) Lvs alternate or radical	318
	(2) Lvs opposite or verticillate	F. 101 Apocynaceae
	(3) Lvs absent	F. 102 Asclepiadaceae
318.	(1) Inflorescence of boragoid type	F. 108 Boraginaceae
	(2) Inflorescence not boragoid; slender, creeping perennials, rooting at nodes	F. 104 Convolvulaceae
	(3) Inflorescence not boragoid; plants ± erect	F. 108 Boraginaceae
319.	(1) Lvs verticillate	320
	(2) Lvs opposite	321
	(3) Lvs alternate, 2-pinnate, stipulate	F. 59 Mimosaceae
	(4) Lvs alternate, 2- or 3-pinnate, exstipulate	F. 84 Leeaceae
	(5) Lvs alternate (not 2- or 3-pinnate), radical or leaves absent	331
320.	Shrubs or trees	F. 101 Apocynaceae
	Herbs	F. 37 Droseraceae

321.	Fls actinomorphic	322
	Fls zygomorphic	330
322.	Lvs simple	323
	Lvs compound	F. 118 Bignoniaceae
323.	(1) Style 1, with 1 or 2 stigmas	324
	(2) Style 1, with 3 branches	F. 42 Frankeniaceae
	(3) Styles or style branches 5	F. 26 Plumbaginaceae
	(4) Style 1, apex divided into many minute stigmatic branches	F. 17 Nyctaginaceae
324.	Inflorescence of boragoid type	F. 108 Boraginaceae
	Inflorescence not of boragoid type	325
325.	(1) Anthers cohering; small herbs	F. 24 Caryophyllaceae
	(2) Anthers united in cone around or above stigma; shrubs sometimes twining, or trees	F. 101 Apocynaceae
	(3) Anthers quite free	326
326.	A. alternating with C. lobes	327
	A. opposite C. lobes	F. 53 Primulaceae
327.	(1) Ovary 1-locular; stipules absent; ovules 4	F. 109 Verbenaceae
	(2) Ovary 1-locular; stipules absent; ovules many	F. 100 Gentianaceae
	(3) Ovary 1-locular; stipules present;small,scarious	F. 24 Caryophyllaceae
	(4) Ovary 2- or 4-locular	328
328.	Plants densely covered with cottony or woolly hairs	F. 109 Verbenaceae
	Not as above	329
329.	Lvs all opposite, usually stipulate	F. 99 Loganiaceae
	Lvs in non-flowering parts alternate, exstipulate	F. 103 Solanaceae
330.	Lvs simple	F. 109 Verbenaceae
	Lvs compound	F. 118 Bignoniaceae
331.	C. 3	F. 87 Polygalaceae
	C. 4 or 5	332
332.	Style with an indusium	333
	Style or styles lacking an indusium	334
333.	C. actinomorphic or nearly so	F. 123 Brunoniaceae
	C. zygomorphic, usually split down one side	F. 124 Goodeniaceae

334.	Fls zygomorphic	F. 103 Solanaceae
	Fls actinomorphic	335
335.	(1) A. hypogynous	336
	(2) A. hypogynous but usually detached with C.	F. 54 Pittosporaceae
	(3) A. distinctly epipetalous, though sometimes near the base of C.-tube	341
336.	Stigmas 1 or 2	337
	Stigmas 4 or 5	F. 26 Plumbaginaceae
337.	A. opposite C. lobes	338
	A. alternating with C. lobes	339
338.	Ovary 1-locular; ovules several	F. 52 Myrsinaceae
	Ovary 2-or-more locular; ovules 1 per loculus	F. 50 Sapotaceae
339.	Trees, shrubs, climbers, or twiners	340
	Herbs (non-climbers) sometimes with woody base	F. 80 Stackhousiaceae
340.	Anthers versatile; ovules 1 or 2 in ovary	F. 73 Olacaceae
	Anthers not versatile; ovules more than two in ovary	F. 54 Pittosporaceae
341.	Inflorescence of boragoid type	342
	Inflorescence not of boragoid type	343
342.	Style 1, with 1 or more stigmas	F. 108 Boraginaceae
	Styles 2, free	F. 107 Hydrophyllaceae
343.	(1) Style 1, with 1 or 2 stigmas, or stigma sessile	344
	(2) Style 1, with 4 stigmas	359
	(3) Style 1, with 5 stigmas	F. 26 Plumbaginaceae
	(4) Style 1, with 6-8 stigmas	F. 104 Convolvulaceae
	(5) Styles 2, free	360
	(6) Styles 5, free	F. 26 Plumbaginaceae
344.	A. opposite C. lobes	345
	A. alternating with C. lobes	347
345.	Herbs	F. 53 Primulaceae
	Shrubs or trees	346
346.	Ovary 1-locular, with central placenta	F. 52 Myrsinaceae
	Ovary 2-or-more locular	F. 50 Sapotaceae
347.	Lvs simple	348
	Lvs compound	358

348. Herbs, growing in marshes or the lvs often floating in water F. 106 Menyanthaceae
Herbs (not aquatic), shrubs or trees, sometimes climbers 349

349. Base of K. more or less covered by number of imbricate bracts and bracteoles; sometimes only 2 bracteoles F. 49 Epacridaceae
Bracteoles 0, or not covering base of K. 350

350. Plants, climbers, twiners, or prostrate 351
Plants ± erect 352

351. Anthers connivent in cone round style; ovary 2-locular; ovules usually many F. 103 Solanaceae
Anthers not connivent; ovary 1-2 locular; ovules 2 or 4 per loculus F. 104 Convolvulaceae

352. Herbs 353
Shrubs or small trees 355

353. Ovules 1 per locule F. 108 Boraginaceae
Ovules more than 1 per locule 354

354. Leaves linear F. 55 Byblidaceae
Leaves not linear F. 103 Solanaceae

355. (1) Ovary 1-locular F. 73 Olacaceae
(2) Ovary 2-locular 356
(3) Ovary 4-locular 357

356. (1) Ovules 1 per loculus F. 114 Myoporaceae
(2) Ovules 2 per loculus F. 108 Boraginaceae
(3) Ovules more than 2 per loculus F. 103 Solanaceae

357. Ovules 1 per loculus F. 108 Boraginaceae
Ovules 1 or more per loculus F. 103 Solanaceae

358. Lvs palmate F. 104 Convolvulaceae
Lvs pinnate F. 103 Solanaceae

359. Ovary 2-locular; plants creeping or trailing F. 104 Convolvulaceae
Ovary 4-locular; tall shrubs or trees F. 108 Boraginaceae

360. (1) Each of the 2 styles divided into 2 branches F. 104 Convolvulaceae
(2) Each style simple; ovary 2-locular; ovules numerous F. 107 Hydrophyllaceae
(3) Each style simple; ovary 2-locular; ovules 2 per loculus F. 104 Convolvulaceae

361.	Latex present	F. 50 Sapotaceae
	Latex absent	362
362.	Lvs simple	363
	Lvs compound	371
363.	G. apocarpous; carpels several, free	F. 93 Rutaceae
	G. syncarpous or carpel 1	364
364.	Perfect A. alternating with a. (sometimes scale-like)	F. 50 Sapotaceae
	A. all perfect	365
365.	(1) A. 10 or fewer	367
	(2) A. numerous; filaments free	F. 59 Mimosaceae
	(3) A. numerous; filaments united into a column	366
366.	Epicalyx, if present, lobed, adnate to calyx	F. 35 Malvaceae
	Epicalyx present, cupular, free from calyx	F. 34 Bombacaceae
367.	Style 1, with many minute stigmatic branches	F. 17 Nyctaginaceae
	Styles or conspicuous stigmas 2-5	368
368.	A. free	369
	A. united below into an open tube	F. 87 Polygalaceae
369.	Style and stigma 1	F. 103 Solanaceae
	Styles or stigmas 2 or more	370
370.	Lvs distichous	F. 51 Ebenaceae
	Lvs spirally arranged or sub-opposite	F. 108 Boraginaceae
371.	Lvs 2-pinnate	F. 59 Mimosaceae
	Lvs 1-pinnate or 3-foliolate	372
372.	Style and stigma 1	F. 59 Mimosaceae
	Styles and stigmas 3-5	F. 95 Oxalidaceae
373.	Lvs opposite or verticillate	374
	Lvs alternate, radical or 0	380
374.	(1) C. 4	375
	(2) C. 5	376
	(3) C. more than 5	378
375.	A. epigynous	F. 121 Campanulaceae
	A. epipetalous	F. 125 Rubiaceae

376.	Shrub parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Plants not parasitic	377
377.	(1) A. not syngenesious	F. 125 Rubiaceae
	(2) A. syngenesious; style with an indusium	F. 124 Goodeniaceae
	(3) A. syngenesious; style lacking an indusium	F. 121 Campanulaceae
378.	Style 1; stigmas 1 or 2	379
	Styles or stigmas 3 or 5	F. 125 Rubiaceae
379.	Shrubs, parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Plants nor parasitic	F. 125 Rubiaceae
380.	Shrubs parasitic on stems (mistletoes)	F. 76 Loranthaceae
	Plants not parasitic	381
381.	(1) A. 2; gynandrous	F. 122 Stylidiaceae
	(2) A. 3	F. 44 Cucurbitaceae
	(3) A. 4	F. 121 Campanulaceae
	(4) A. 5	382
	(5) A. more than 5	387
382.	Style with an indusium	F. 124 Goodeniaceae
	Style lacking an indusium	383
383.	Fls actinomorphic	384
	Fls zygomorphic;C. tube usually split down one side	F. 121 Campanulaceae
384.	Plants prostrate or climbers; tendrils large	F. 44 Cucurbitaceae
	Plants non-climbers; tendrils absent	385
385.	(1) A. alternating with C. lobes; C. fringed	F. 106 Menyanthaceae
	(2) A. alternating with C. lobes; C. not fringed; fruit not circumcissile	F. 121 Campanulaceae
	(3) A. alternating with C. lobes; C. not fringed; fruit circumscissile	F. 120 Sphenocleaceae
	(4) A. opposite C. lobes	386
386.	Herbs	F. 53 Primulaceae
	Trees or woody climbers	F. 52 Myrsinaceae
387.	Lvs persistent	F. 71 Myrtaceae
	Lvs if present very deciduous	F. 19 Cactaceae
388.	Fls all 1-sexual	389
	Fls at least some 2-sexual	439

389.	Lvs or scales in whorls of 3 or more	390
	Lvs or scales alternate, opposite, or absent	392
390.	Herbs, often aquatic	391
	Shrubs or trees	F. 16 Casuarinaceae
391.	Ovary inferior	F. 64 Haloragaceae
	Ovary superior	F. 9 Ceratophyllaceae
392.	Latex present	393
	Latex absent	394
393.	Ovary 1-locular	F. 14 Moraceae
	Ovary 2-or more-locular	F. 82 Euphorbiaceae
394.	(1) P. segments 2	395
	(2) P. segments 3	399
	(3) P. segments 4	405
	(4) P. segments 5 or more, in some P. only obscurely lobed, truncate	415
395.	Ovary superior	396
	Ovary inferior	F. 126 Asteraceae
396.	Climbers	F. 11 Menispermaceae
	Non-climbers	397
397.	(1) Ovary 1-locular	398
	(2) Ovary 2-3 locular; ovules 1-2 per locule	F. 82 Euphorbiaceae
	(3) Ovary 2-3 locular; ovules many per locule	F. 63 Podostemaceae
398.	Lvs stipulate	F. 15 Urticaceae
	Lvs exstipulate	F. 20 Chenopodiaceae
399.	Ovary inferior	F. 77 Viscaceae
	Ovary superior	400
400.	(1) Style or stigma 1	401
	(2) Styles or style - branches 2 or more	403
	(3) Stigma penicillate	F. 15 Urticaceae
401.	Lvs simple	402
	Lvs compound	F. 88 Sapindaceae
402.	Lvs with 7-20 primary veins on each side of midrib	F. 2 Myristicaceae
	Midrib the only prominent vein, if any	F. 75 Santalaceae

403.	(1) Ovary 1 locular	404
	(2) Ovary 2-3 locular; ovules 1-2 per locule	F. 82 Euphorbiaceae
	(3) Ovary 2-3 locular; ovules numerous per locule	F. 63 Podostemaceae
404.	Lvs ochreate	F. 25 Polygonaceae
	Lvs lacking an ochrea	F. 21 Amaranthaceae
405.	Shrubs parasitic on stems (mistletoes)	F. 77 Viscaceae
	Plants not parasitic	406
406.	G. or ovary superior	407
	Ovary inferior	F. 64 Haloragaceae
407.	G. apocarpous; carpels several free	408
	G. syncarpous or carpel 1	409
408.	Styles free	F. 10 Ranunculaceae
	Styles 4, connate	F. 33 Sterculiaceae
409.	(1) Style 1; stigmas 1 or 2	410
	(2) Styles 2	F. 13 Ulmaceae
	(3) Styles 3 or 4	F. 82 Euphorbiaceae
	(4) Styles or stigmas penicillate; lvs with stinging hairs	F. 15 Urticaceae
410.	Lvs simple or absent	411
	Lvs compound	F. 88 Sapindaceae
411.	(1) Lvs alternate, without stinging hairs or lvs absent	412
	(2) Lvs alternate, with stinging hairs	F. 15 Urticaceae
	(3) Lvs opposite	F. 15 Urticaceae
412.	(1) A. 2 in male fls	F. 67 Thymelaeaceae
	(2) A. usually 4 in male fls	413
	(3) A. 6 in male fls	F. 3 Lauraceae
	(4) A. 10 or numerous in male fls	414
413.	Lvs absent at time of flowering	F. 75 Santalaceae
	Lvs present at time of flowering	F. 15 Urticaceae
414.	A. not united in male fls	F. 38 Flacourtiaceae
	A. united in male fls	F. 33 Sterculiaceae
415.	Ovary or G. superior	416
	Ovary inferior	437
416.	G. apocarpous; carpels several free	417
	G. syncarpous or carpel 1	419

417.	P. segments 5	418
	P. segments 6	F. 11 Menispermaceae
418.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted	F. 33 Sterculiaceae
419.	Lvs alternate, radical, or absent	420
	Lvs opposite	434
420.	Climbers	421
	Non-climbers	422
421.	(1) Styles 3, free	F. 21 Amaranthaceae
	(2) Styles connate or united, with 3 stigmas: A. 2-5 in male fls	F. 82 Euphorbiaceae
	(3) Style 1, short; stigmas 3; A. about 8 in the male fls	F. 25 Polygonaceae
422.	P. segments 5, or P. truncate	423
	P. segments 6	432
423.	Lvs simple or absent	424
	Lvs compound	431
424.	Style and stigma 1	425
	Styles or stigmas more than 1	426
425.	(1) Ovary 1-locular; seeds u-shaped	F. 47 Gyrostemonaceae
	(2) Ovary 1-locular; seeds not u-shaped	F. 82 Euphorbiaceae
	(3) Ovary 2-locular	F. 51 Ebenaceae
	(4) Ovary 3-or-more locular	F. 88 Sapindaceae
426.	Styles or stigmas usually 2 or 3	427
	Styles or stigmas 10 or more (rarely 2) seeds arillate	F. 47 Gyrostemonaceae
427.	Herbs	428
	Shrubs or trees	429
428.	(1) Styles entire: ovary 1-locular	F. 21 Amaranthaceae
	(2) Styles entire: ovary 2-3 locular	F. 82 Euphorbiaceae
	(3) Styles divided	F. 82 Euphorbiaceae
429.	Ovary 1-locular with 1 ovule	430
	Ovary 2-3 locular	F. 82 Euphorbiaceae
430.	(1) Styles or stigmas 2 (sometimes divided); lvs stipulate	F. 13 Ulmaceae

	(2) Styles or stigmas 2; lvs exstipulate	F. 20 Chenopodiaceae
	(3) Styles or stigmas 3; lvs with ochrea	F.25 Polygonaceae
431.	Lvs 3-foliolate	F. 82 Euphorbiaceae
	Lvs 1-pinnate	F. 88 Sapindaceae
432.	(1) Perennials, slender creeping	F. 25 Polygonaceae
	(2) Shrubs or trees: P. (3) + (3); styles usually 3 and connate	F. 51 Ebenaceae
	(3) Shrubs or trees: P.segments usually all free	433
433.	P. segments in 1 series; style 1, entire or shortly lobed	F. 88 Sapindaceae
	P. segments usually in 2 series; styles usually 3, simple or divided	F. 82 Euphorbiaceae
434.	Style 1; stigmas 1 or 2	435
	Styles 2 or more	F. 82 Euphorbiaceae
435.	Woody climbers	F. 17 Nyctaginaceae
	Shrubs or trees	436
436.	A. 2 in male fls	F. 112 Oleaceae
	A. more than 2	F. 88 Sapindaceae
437.	Style and stigma 1, or stigma sessile	F. 70 Combretaceae
	Styles or stigmas 2	438
438.	Fls in heads	F. 126 Asteraceae
	Fls in umbels	F. 98 Apiaceae
439.	Latex present	440
	Latex absent	443
440.	(1) Fls in heads surrounded by cup-shaped involucre; heads resembling simple bisexual fls within which are about 10 male fls (each of A. 1) with central female fl. of 1 pistil with branched style; P. absent	F. 82 Euphorbiaceae
	(2) Fls in heads surrounded by involucre of bracts; the heads often resembling simple fls; each fl. (floret) with P. of (4) or (5) parts; A. syngenesious; ovary inferior; style unbranched with 2 stigmas	F. 126 Asteraceae
	(3) Not as in (1) and (2) above	441
441.	(1) P. in 1 series of P. 4 or P. 5	442
	(2) P. in 2 series of K. 2, C. 4; ovary superior	F. 12 Papaveraceae
	(3) P. in 2 series of K. 2, C. 4; ovary inferior	F. 125 Rubiaceae

442.	A. 4; trees	F. 14 Moraceae
	A. numerous; mostly herbs	F. 12 Papaveraceae
443.	Ovary or G. superior	444
	Ovary inferior	541
444.	G. apocarpous; carpels several free	445
	G. syncarpous or carpel 1	453
445.	(1) P. segments 4	446
	(2) P. segments 5	448
	(3) P. segments 6	450
446.	Climbers	F. 10 Ranunculaceae
	Non-climbers	447
447.	Herbs	F. 10 Ranunculaceae
	Shrubs or trees	F. 33 Sterculiaceae
448.	Lvs gland-dotted	F. 93 Rutaceae
	Lvs not gland-dotted or lvs absent	449
449.	Lvs alternate or absent	F. 33 Sterculiaceae
	Lvs radical	F. 10 Ranunculaceae
450.	Lvs radical	F. 10 Ranunculaceae
	Lvs alternate	451
451.	(1) Herbs with peltate lvs; aquatics	F. 8 Nymphaeaceae
	(2) Woody climbers	F. 11 Menispermaceae
	(3) Shrubs or trees; non-climbers	452
452.	Styles or stigmas free	F. 1 Annonaceae
	Styles or stigmas connate	F. 33 Sterculiaceae
453.	(1) P. segments 1	F. 24 Caryophyllaceae
	(2) P. segments 2	454
	(3) P. segments 3	455
	(4) P. segments 4	458
	(5) P. segments 5	488
	(6) P. segments 6	528
454.	(1) A. 1; ovary 2-locular	F. 63 Podostemaceae
	(2) A. 5 or fewer; ovary 1-locular	F. 20 Chenopodiaceae
	(3) A. numerous; herbs, or small shrubs	F. 12 Papaveraceae
455.	(1) Lvs alternate	456

	(2) Lvs opposite or verticillate	457
	(3) Lvs absent or reduced to scales	F. 20 Chenopodiaceae
456.	(1) Style 1	F. 24 Caryophyllaceae
	(2) Styles 2 or 3	F. 21 Amaranthaceae
	(3) Styles 3; ovary 3-locular	F. 63 Podostemaceae
457.	Stigma 1	F. 66 Lythraceae
	Stigmas 3	F. 29 Elatinaceae
458.	Lvs alternate, radical, or absent	459
	Lvs opposite or verticillate	480
459.	Style and stigma 1	460
	Styles or stigmas more than 1	475
460.	(1) A. 2	461
	(2) A. 3 + a. 1	F. 62 Proteaceae
	(3) A. 4	464
	(4) A. 5	F. 33 Sterculiaceae
	(5) A. 6	F. 3 Lauraceae
	(6) A. more than 6	471
461.	Lvs simple or absent	462
	Lvs compound	F. 119 Lentibulariaceae
462.	Lvs radical or absent	F. 119 Lentibulariaceae
	Lvs alternate	463
463.	Herbs; P. polyphyllous	F. 46 Brassicaceae
	Shrubs; P. gamophyllous	F. 67 Thymelaeaceae
464.	Plants usually climbers, with leaf-opposed tendrils	F. 77 Vitaceae
	Plants without tendrils	465
465.	(1) Lvs deeply dissected; A. epiphyllous	F. 62 Proteaceae
	(2) Lvs compound; A. not epiphyllous	F. 60 Caesalpiniaceae
	(3) Lvs simple, with stinging hairs	F. 15 Urticaceae
	(4) Lvs simple, without stinging hairs	466
466.	A. distinctly epiphyllous	F. 62 Proteaceae
	A. hypogynous, or at base of P.	467
467.	Fls in axillary spikes	468
	Fls not in spikes	470
468.	Lvs glabrous or with scattered hairs	469
	Underside of lvs white with close-set hairs	F. 15 Urticaceae

469.	P. segments united into 4-lobed tubular structure	F. 74 Opiliaceae
	Segments free	F. 75 Santalaceae
470.	Fls ebracteate, in terminal racemes	F. 46 Brassicaceae
	Fls bracteate, in clusters, cymes or heads	F. 15 Urticaceae
471.	Lvs simple	472
	Lvs compound	F. 60 Caesalpiniaceae
472.	Herbs	F. 12 Papaveraceae
	Shrubs or trees	473
473.	A. 10 or fewer	474
	A. numerous	F. 32 Tiliaceae
474.	A. united into tube	F. 33 Sterculiaceae
	A. epiphyllous, but free from one another	F. 67 Thymelaeaceae
475.	(1) A. 2; herbs, either aquatic or growing in wet places; lvs radical, floating, or 0; K. 2, C. united, 2-lipped	F. 119 Lentibulariaceae
	(2) A. 4 or fewer: plants not as in (1)	476
	(3) A. 5-10	478
	(4) A. numerous	479
476.	Lvs with ochrea	F. 25 Polygonaceae
	Lvs without ochrea	477
477.	Herbs or shrubs; lvs covered with mealy scales	F. 20 Chenopodiaceae
	Trees	F. 13 Ulmaceae
478.	Style 1, usually with 2 stigmas	F. 88 Sapindaceae
	Styles more than 1	F. 25 Polygonaceae
479.	Herbs	F. 12 Papaveraceae
	Trees	F. 33 Sterculiaceae
480.	Style and stigma 1	481
	Styles or stigmas more than 1	487
481.	(1) A. 2	482
	(2) A. 3 or 5	F. 66 Lythraceae
	(3) A. 4	484
	(4) A. 8-10	F. 67 Thymelaeaceae
482.	A. hypogynous, united into cup at base	F. 21 Amaranthaceae
	A. epiphyllous, or on K.-tube	483

483.	Herbs, usually in moist habitats	F. 66 Lythraceae
	Shrubs, small	F. 67 Thymelaeaceae
484.	Lvs with stinging hairs	F. 15 Urticaceae
	Lvs without stinging hairs	485
485.	(1) A. hypogynous, or at base of P. segments	486
	(2) A. epiphyllous; shrubs or trees	F. 62 Proteaceae
	(3) A. on the K. tube: herbs	F. 66 Lythraceae
486.	Herbs	F. 21 Amaranthaceae
	Shrubs or trees	F. 75 Santalaceae
487.	(1) A. 1	F. 24 Caryophyllaceae
	(2) A. 4 alternating with the P. lobes	F. 18 Aizoaceae
	(3) A. 4 opposite the P. lobes	F. 75 Santalaceae
	(4) A. more than 4	F. 18 Aizoaceae
488.	Lvs alternate, radical, or absent	489
	Lvs opposite or verticillate	516
489.	A. 5 or fewer	490
	A. more than 5	504
490.	Style and stigma 1	491
	Styles or stigmas more than 1	497
491.	Climbers with leaf-opposed tendrils	F. 85 Vitaceae
	Non-climbers, or climbers without leaf-opposed tendrils	492
492.	Lvs simple or absent	493
	Lvs compound	F. 60 Caesalpiniaceae
493.	(1) A. 2 or 3 with or without anthers; A. united at base in short cup	F. 21 Amaranthaceae
	(2) A. 3 + A. 5	F. 73 Olacaceae
	(3) A. 5, all with anthers	494
494.	Herbs or undershrubs	F. 21 Amaranthaceae
	Shrubs or trees	495
495.	A. alternate with P. segments	F. 83 Rhamnaceae
	A. opposite P. segments	496
496.	Twining or scrambling shrubs	F. 71 Opiliaceae
	Erect shrubs or trees	F. 75 Santalaceae

497.	(1)	Twiners: P. segments free; styles 3	F. 21 Amaranthaceae
	(2)	Twiners: P. segments united; style 1, with 2 short stigmas	F. 83 Rhamnaceae
	(3)	Climbers with axillary tendrils	F. 43 Passifloraceae
	(4)	Climbers with tendrils terminating inflorescence	F. 25 Polygonaceae
	(5)	Non-climbers, non-twiners	498
498.		Herbs	499
		Shrubs or trees	502
499.		Ovary 1-locular	500
		Ovary 3-5 locular	F. 23 Molluginaceae
500.		Lvs with ochrea	F. 25 Polygonaceae
		Lvs without ochrea	501
501.		Fls with 1 bract and usually 1-2 bracteoles	F. 21 Amaranthaceae
		Fls without bracts or bracteoles	F. 20 Chenopodiaceae
502.	(1)	A. opposite P. segments; fruit drupe; tall shrubs or trees	F. 13 Ulmaceae
	(2)	A. opposite P. segments; fruit nut or achene: Shrubs, usually small	F. 20 Chenopodiaceae
	(3)	A. alternating with P. segments	503
503.		A. 5 + a. 5; ovary 5-locular	F. 33 Sterculiaceae
		A. 5; ovary 2-locular	F. 83 Rhamnaceae
504.		Lvs simple or absent	505
		Lvs compound	514
505.		Style 1, simple, or branches with 2 or more stigmas	506
		Styles 2 or more, free	512
506.	(1)	Climbers	F. 25 Polygonaceae
	(2)	Herbs, non-climbers	507
	(3)	Shrubs or trees	508
507.	(1)	A. 10 or fewer; fls hypogynous	F. 25 Polygonaceae
	(2)	A. 10 or fewer; fls perigynous	F. 18 Aizoaceae
	(3)	A. numerous	F. 18 Aizoaceae
508.		P. polyphyllous	509
		P. gamophyllous	510
509.	(1)	Lvs scale-like; stems flat; lvs 0; A. 8; stigmas 3	F. 25 Polygonaceae
	(2)	Lvs present; seeds lacking endosperm	F. 88 Sapindaceae
	(3)	Lvs present; seeds endospermic	F. 31 Elaeocarpaceae

510.	Fls small, in heads or spikes	F. 59 Mimosaceae
	Fls not in heads or spikes	511
511.	(1) A. 8 + a. 8; lvs stipulate	F. 38 Flacourtiaceae
	(2) A. 9 + a. 3 or more	F. 3 Lauraceae
	(3) A. 12-13	F. 67 Thymelaeaceae
	(4) A. 10-12 + a. 10-12	F. 38 Flacourtiaceae
	(5) A. about 15, irregularly clustered in head, usually below gynoecium	F. 33 Sterculiaceae
512.	(1) Styles 2	F. 25 Polygonaceae
	(2) Styles 3-4	513
	(3) Styles 5	F. 23 Molluginaceae
513.	Ovary 1-locular; ovule 1	F. 25 Polygonaceae
	Ovary 3- or 4-locular; ovules several per loculus	F. 23 Molluginaceae
514.	(1) Lvs simply pinnate; stigma 1	515
	(2) Lvs simply pinnate; stigmas 2	F. 88 Sapindaceae
	(3) Lvs bipinnate	F. 25 Mimosaceae
515.	Ovary 1-locular	F. 60 Caesalpiniaceae
	Ovary 2 or more locular	F. 88 Sapindaceae
516.	Style and stigma 1	517
	Styles or style-branches more than 1	522
517.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	518
518.	A. hypogynous	519
	A. epiphyllous or on K. tube	520
519.	P. segments free; herbs	F. 21 Amaranthaceae
	P. segments united; trees or herbs	F. 17 Nyctaginaceae
520.	Lvs opposite, unequal in size	F. 18 Aizoaceae
	Lvs opposite, equal in size	521
521.	A. 10	F. 67 Thymelaeaceae
	A. less than 10	F. 66 Lythraceae
522.	(1) A. 1	F. 24 Caryophyllaceae
	(2) A. 2-5	523
	(3) A. more than 5	526
523.	A. hypogynous	524
	A. epiphyllous or on the K. tube	F. 18 Aizoaceae

524.	(1) Ovule 1	525
	(2) Ovules more than 1; placentation free central	F. 24 Caryophyllaceae
	(3) Ovules more than 1; placentation axile	F. 23 Molluginaceae
525.	P. segments scarious	F. 21 Amaranthaceae
	P. segments herbaceous	F. 20 Chenopodiaceae
526.	Fls hypogynous	527
	Fls perigynous: A. on K. tube	F. 18 Aizoaceae
527.	Ovary 1-locular	F. 24 Caryophyllaceae
	Ovary 2-5 locular	F. 18 Aizoaceae
528.	Lvs alternate, radical, or absent	529
	Lvs opposite or verticillate	539
529.	P. in 2 series of K. 2, C. 4; sepals caducous in some species	F. 12 Papaveraceae
	P. in 1 series or in 2 series, usually P. 3 + 3	530
530.	(1) A. 3	531
	(2) A. 5 or 6, sometimes with a.	533
	(3) A. more than 6	536
531.	(1) Trees or shrubs	532
	(2) Climbers with leaf-opposed tendrils	F. 28 Vitaceae
	(3) Herbs	F. 29 Elatinaceae
532.	Style and stigma 1	F. 3 Lauraceae
	Styles 2-3	F. 82 Euphorbiaceae
533.	Plants without tendrils	534
	Climbers with leaf-opposed tendrils	F. 85 Vitaceae
534.	Lvs large, compound	F. 89 Burseraceae
	Lvs simple	535
535.	Lvs without ochrea	F. 82 Euphorbiaceae
	Lvs with ochrea	F. 25 Polygonaceae
536.	Twiners; lvs scale-like	F. 3 Lauraceae
	Non-twiners; lvs not scale-like	537
537.	Style and stigma 1	538
	Styles or stigmas 2-3	F. 25 Polygonaceae

538.	(1)	Shrubs or trees; A. about 9, usually with a.	F. 3 Lauraceae
	(2)	Shrubs or trees; A. numerous; fruit a drupe	F. 31 Elaeocarpaceae
	(3)	Shrubs or trees; A. numerous; fruit a legume	F. 59 Mimosaceae
	(4)	Shrubs or trees; lvs gland-dotted; A. 8 - ca 12	F. 93 Rutaceae
539.	(1)	A. 3	F. 29 Elatinaceae
	(2)	A. 9, usually with 3a.	F. 3 Lauraceae
	(3)	A. 10 or numerous	540
540.		Herbs	F. 66 Lythraceae
		Shrubs or small trees	F. 65 Sonneratiaceae
541.		Parasitic aerial shrubs (mistletoes)	F. 76 Loranthaceae
		Plants not parasitic	542
542.		Lvs alternate, radical, or absent	543
		Lvs opposite or verticillate	557
543.		Lvs gland-dotted	544
		Lvs not glandular, or lvs absent	545
544.		A. 10	F. 70 Combretaceae
		A. numerous	F. 71 Myrtaceae
545.		P. actinomorphic	546
		P. zygomorphic	556
546.	(1)	P. 3 or quite entire	F. 6 Aristolochiaceae
	(2)	P. segments 4	547
	(3)	P. segments 5 or 6	548
547.	(1)	A. 4; lvs compound	F. 97 Araliaceae
	(2)	A. 4; leaves simple or scale-like; style single	F. 75 Santalaceae
	(3)	A. 4; leaves simple; styles 3-6	F. 18 Aizoaceae
	(4)	A. 5 (rarely 4); anthers syngenesious; fls in heads surrounded by involucre of bracts	F. 126 Asteraceae
548.		A. 5	549
		A. more than 5	554
549.		Anthers free	550
		Anthers syngenesious	F. 126 Asteraceae
550.		Herbs	F. 98 Apiaceae
		Shrubs or trees	551
551.		Style 1 with 1-2 stigmas	552
		Style 2	F. 97 Araliaceae

552.	A. opposite P. segments	F. 75 Santalaceae
	A. alternating with P. segments	553
553.	Lvs simple and entire	F. 83 Rhamnaceae
	Lvs divided or compound	F. 97 Araliaceae
554.	Lvs simple	555
	Lvs compound	F. 97 Araliaceae
555.	Trees; A. usually 10	F. 71 Combretaceae
	Herbs or shrubs; A. usually numerous	F. 18 Aizoaceae
556.	Stigmas 1 or 2; each with an indusium	F. 124 Goodeniaceae
	Stigmas 3-6; lacking an indusium	F. 6 Aristolochiaceae
557.	Lvs gland-dotted	F. 71 Myrtaceae
	Lvs not gland-dotted	558
558.	(1) P. segments 3	F. 125 Rubiaceae
	(2) P. segments 4	559
	(3) P. segments 5	562
	(4) P. segments 6	564
559.	(1) A. 2	F. 67 Thymelaeaceae
	(2) A. 4	560
	(3) A. 4-5; anthers syngenesious	F. 126 Asteraceae
	(4) A. numerous	F. 71 Myrtaceae
560.	Aquatic herbs	F. 64 Haloragaceae
	Plants not aquatic	561
561.	A. alternating with P. segments	F. 125 Rubiaceae
	A. opposite P. segments	F. 75 Santalaceae
562.	A. 5	563
	A. numerous	F. 18 Aizoaceae
563.	(1) Anthers syngenesious	F. 126 Asteraceae
	(2) Anthers free, opposite P. segments	F. 75 Santalaceae
	(3) Anthers free, alternating with P. segments	F. 125 Rubiaceae
564.	A. 3	F. 125 Rubiaceae
	A. 10	F. 22 Portulacaceae
565.	Latex present	566
	Latex absent	567
566.	Styles or stigmas 3 or more	F. 82 Euphorbiaceae
	Style or stigma 1	F. 14 Moraceae

567. Fls 1-sexual 568
Fls 2-sexual 572

568. Climbers F. 5 Piperaceae
Non-climbers 569

569. (1) Lvs opposite F. 48 Bataceae
(2) Lvs alternate, reduced to scales or in whorls of
4 or more, or irregularly arranged 570
(3) Lvs alternate, not reduced to scales 571

570. Lvs reduced to minute scales; shrubs or trees F. 16 Casuarinaceae
Lvs entire or divided; aquatic herbs F. 64 Haloragaceae

571. Trees; female fls solitary, lacking a perianth; lvs entire F. 82 Euphorbiaceae
Herbs or undershrubs; female fls 1 or 2 surrounded
by spiny involucre; lvs lobed or divided F. 126 Asteraceae

572. Herbaceous plants, growing only on rocks in
running water F. 63 Podostemaceae
Land plants 573

573. A. 10 or fewer, usually 2-3 F. 5 Piperaceae
A. numerous F. 59 Mimosaceae

2. KEY TO THE FAMILIES OF LILIATAE

1.	Plants of marine or brackish habitats	2
	Plants of fresh-water or land habitats	3
2.	Lvs ligulate	F. 129 Hydrocharitaceae
	Lvs eligulate	F. 133 Ruppiaceae
3.	Plants floating with 1 or more flat, leaf-like stems cohering by their edges, 1-8 mm in diameter, with or without roots on the undersurface	F. 139 Lemnaceae
	Plants not as above	4
4.	Fls 1-sexual	5
	Fls 2-sexual	26
5.	Lvs opposite or verticillate	6
	Lvs alternate, radical, at apex of stem or lvs 0	8
6.	Land plants: slender, twining	F. 163 Dioscoreaceae
	Aquatic or marsh plants: non twiners	7
7.	P. 0 or P. 1 in male fls	F. 134 Najadaceae
	P. 3 + 3; A. 3-9 in male fls	F. 129 Hydrocharitaceae
8.	Lvs simple	9
	Lvs compound	25
9.	Fls closely packed in dense, simple, unbranched spadix, with a usually convolute, coloured, or petal-like spathe arising from base	F. 138 Araceae
	Spathe sometimes present, but inflorescence not as above and often branched	10
10.	Trees or shrubs, rarely climbers	11
	Herbs, sometimes large	12
11.	P, 0; fls in heads or spikes: ovaries more or less cohering; trees, shrubs, or climbers	F. 137 Pandanaceae
	P. 3 + 3; climbers	F. 162 Smilacaceae
12.	Fls minute, within imbricate bracts or scales, in heads or spikelets: P. 0, or of 1-8 scales or bristles, usually concealed within bracts	13
	Otherwise	18
13	Ovary surmounted by a tuft of hairs	F. 149 Hydatellaceae
	Ovary with a distinct style or stigmas	14

14.	Fls in small, usually androgynous heads 2-8 mm in diameter; mostly marsh or aquatic plants	F. 142 Eriocaulaceae
	Fls in spikelets	15
15.	Margins of leaf-sheaths free sometimes overlapping	16
	Margins of leaf-sheaths connate	F. 147 Cyperaceae
16.	Ligule at junction of leaf-blade and sheath	17
	Lvs eligulate	F. 144 Restionaceae
17	Anthers uniloculate, dorsifixed	F. 145 Centrolepidaceae
	Anthers biloculate, basifixed	F. 148 Poaceae
18.	Aquatic or marsh plants	19
	Land plants	21
19	Male and female fl. on separate plants	F. 159 Hanguanaceae
	Male and female fl. on the same plant	20
20.	Ovary superior	F. 150 Typhaceae
	Ovary inferior	F. 129 Hydrocharitaceae
21.	Climbers	22
	Non-climbers	23
22.	Ovary inferior	F. 163 Dioscoreaceae
	Ovary superior	F. 162 Smilacaceae
23.	Lvs large, pinnately or palmately divided (palms)	F. 136 Arecaceae
	Lvs otherwise	24
24.	Fruit with many small seeds	F. 146 Juncaceae
	Fruit with 3 large seeds	F. 155 Liliaceae
25.	Ovary superior	F. 136 Arecaceae
	Ovary inferior	F. 163 Dioscoreaceae
26.	Fls closely packed in simple spadix, usually with coloured spathe arising from base and more or less enclosing it	F. 138 Araceae
	Inflorescence otherwise, often branched; spathe sometimes present, but fls not in spadix	27
27.	Pistils several	28
	Pistil 1	32
28.	Land plants	29
	Aquatic or marsh plants	30

29.	Woody plants; lvs large, pinnately or palmately divided leaves (palms)	F. 136 Arecaceae
	Small herbaceous plants; lvs, if present, entire	F. 145 Centrolepidaceae
30.	(1) P. 2; A. 6; G. 3	F. 130 Aponogetonaceae
	(2) P. 4; A. 4; G. 4	F. 132 Potamogetonaceae
	(3) P. 3-6, rarely 4; A. 3-many; G. 3-many	31
31.	P. similar in colour and texture	F. 131 Juncaginaceae
	P. differing in colour and texture	F. 128 Alismataceae
32.	Ovary superior (superior, if P.0)	33
	Ovary inferior	60
33.	Fls minute, within imbricate bracts or scales (glumes); in spikelets; P.0, or of 1-8 scales, or bristles usually concealed within bracts	34
	Otherwise	37
34.	Ligule present at junction of lf-sheath and lamina	F. 148 Poaceae
	Lvs eligulate	35
35.	A. 1	36
	A. more than 1	F. 147 Cyperaceae
36.	Small annuals; inflorescence simple	F. 145 Centrolepidaceae
	Plants rhizomatous; inflorescence usually branched	F. 147 Cyperaceae
37.	P. segments 4 or fewer	38
	P. segments 6, rarely 5	40
38.	(1) A. 1	F. 152 Philydraceae
	(2) A. 3	F. 140 Xyridaceae
	(3) A. 4	39
39.	Twiners with alternate lvs	F. 161 Stemonaceae
	Lvs radical; fls spicate	F. 138 Araceae
40.	Lvs simple or 0	41
	Lvs compound (palm)	F. 136 Arecaceae
41.	Stems woody; lvs broad (palm)	F. 136 Arecaceae
	Otherwise	42
42.	A. 3 (rarely 2)	43
	A. 6 (rarely 4-5)	48
43.	Inner P. segments free	44
	Inner P. segments united	F. 140 Xyridaceae

44.	P. similar in colour and texture	45
	P. differing in colour and texture	F. 141 Commelinaceae
45.	A. hypogynous	46
	A. inserted at base of inner P. segments	F. 154 Haemodoraceae
46.	P. petaloid	F. 155 Liliaceae
	P. sepaloid	47
47.	Style 1 with 3 stigmas	F. 146 Juncaceae
	Stigmas sessile, free	F. 131 Juncaginaceae
48.	Lf. tips prolonged into tendril	49
	Otherwise	50
49.	C. about 3 mm long	F. 143 Flagellariaceae
	C. above 1 cm long	F. 155 Liliaceae
50.	P. differing in color and texture	51
	P. similar in color and texture	52
51.	Inner P. fringed	F. 155 Liliaceae
	Inner P. not fringed	F. 141 Commelinaceae
52.	P. members petaloid	53
	P. members sepaloid	56
53.	Aquatic plants, floating or rooted	F. 153 Pontederiaceae
	Land plants	54
54.	Coarse woody climber; venation predominantly reticulate	F. 162 Smilacaceae
	Non-climbers; if climbers, venation convergent	55
55.	Inflorescence tall woody spike	F. 158 Xanthorrhoeaceae
	Inflorescence otherwise	F. 155 Liliaceae
56.	Marsh or aquatic plants	F. 131 Juncaginaceae
	Land plants	57
57.	Climbers	F. 138 Araceae
	Non-climbers	58
58.	Style 1, simple	59
	Style divided into 3 stigmas	F. 146 Juncaceae
59.	Inflorescence tall woody spike	F. 158 Xanthorrhoeaceae
	Inflorescence otherwise	F. 155 Liliaceae

60.	Fls strongly gynandrous	F. 164 Orchidaceae
	Fls not gynandrous	61
61.	Submerged aquatics: leaf lamina submerged or floating: styles or stigmas 6, 2-lobed	F. 129 Hydrocharitaceae
	Otherwise	62
62.	Lvs entire or with serrate margins	63
	Lf lamina deeply dissected	F. 160 Taccaceae
63.	Venation pinnate	F. 151 Zingiberaceae
	Venation convergent (middle vein sometimes stronger than others) but difficult to see with thick lvs, or veins 1-several parallel	64
64.	A. 3	65
	A. 6	67
65.	P. polyphyllous	66
	P. gamophyllous	F. 165 Burmanniaceae
66.	Ovules 1-2 per loculus	F. 154 Haemodoraceae
	Ovules usually several per loculus	F. 156 Iridaceae
67.	Fls in umbels, rarely solitary on leafless scape	F. 155 Liliaceae
	Fls in simple or compound racemes	F. 157 Agavaceae

1. FAMILY DESCRIPTIONS OF MAGNOLIATAE

F.1 ANNONACEAE

Flowers bisexual, actinomorphic; sepals usually 3; petals 6 in 2 rows; stamens numerous, thick and short, closely packed on thickened torus; carpels several, free, with short and thick style or sessile stigma; fruit usually succulent; seeds endospermic; trees, shrubs, or climbers; leaves simple, alternate, exstipulate.

F.2 MYRISTICACEAE

Flowers unisexual, calyx usually 3-lobed, corolla lacking; stamens 2-40, with filaments united into column; ovary superior, of 1 carpel, unilocular; ovule 1; fruit fleshy or sub-woody, nearly always dehiscing into 1 valves; seeds 1, with coloured aril, endospermic; trees and shrubs, often aromatic; leaves simple, alternate, sometimes nearly whorled, exstipulate; usually gland-dotted.

F.3 LAURACEAE

Flowers imperfect, often unisexual, actinomorphic; calyx usually 6-partite, segments in 2 rows; petals 0; stamens few, in 2 rows; anthers opening by valves from base upwards; carpel 1; style very short; stigma capitate; ovule 1; fruit berry or drupe; seeds without endosperm; trees, shrubs or leafless twiners; leaves simple, alternate or opposite, exstipulate.

F.4 HERNANDIACEAE

Flowers bi- or unisexual; perianth sepal-like in 2 whorls, 4-8 segments in each whorl; stamens 3-5, opposite outer sepals with gland-like staminodes in 1-2 whorls outside stamens; ovary inferior, of 1 carpel; ovule 1; fruit achene enveloped by expanded receptacle, drupe or 2-4 winged samara; seed without endosperm; trees or shrubs, rarely lianes; leaves alternate, simple, or palmately compound, alternate, exstipulate, with oil passages.

F.5 PIPERACEAE

Flowers bi- or unisexual; sepals and petals lacking; stamens 2-3; ovule 1; stigma sessile; fruit berry; seeds endospermic; herbs, shrubs, or climbers, often succulent; leaves simple, alternate, opposite or whorled; stipulate or exstipulate.

F.6 ARISTOLOCHIACEAE

Flowers bisexual, actinomorphic or zygomorphic; perianth a single whorl, tubular, usually oblique; stamens 5-16; ovary inferior, 3-6 locular; ovules several per loculus; style simple; fruit capsule; seeds endospermic; climbers or trailing herbs; leaves simple, alternate, exstipulate.

F.7 NELUMBONACEAE

Flowers bisexual, actinomorphic; perianth members several; stamens numerous; carpels several, immersed in fleshy torus; ovules 1 per carpel; stigma capitate; fruit a nutlet; seeds without endosperm; aquatic plants; leaves large, peltate, blades mostly standing above the water, alternate, exstipulate.

F.8 NYMPHAEACEAE

Flowers bisexual, actinomorphic; sepals 4, persistent; petals many; stamens numerous; pistils several, indehiscent, free or immersed in fleshy torus; ovules numerous attached to walls of ovary; fruit berry; seeds endospermic; aquatic herbs; leaves simple, floating, alternate, exstipulate.

F.9 CERATOPHYLLACEAE

Flowers unisexual, minute and inconspicuous, each solitary at a node; perianth of 10-20 spirally arranged on flat receptacle with thickened, often coloured, connective projecting beyond anthers; ovary of 1 carpel, superior, unilocular, with parietal placenta; ovule 1; fruit nut, terminated by persistent style; seeds without endosperm; aquatic submerged herbs; leaves simple, dichotomously divided, whorled, exstipulate.

F.10 RANUNCULACEAE

Flowers uni- or bisexual, actinomorphic; sepals mostly 5, deciduous; petals 4-5, seldom 0; stamens numerous; carpels free, several; ovule 1; fruit usually achene or follicle; seeds endospermic; herbs or climbers; leaves simple or compound, alternate or opposite, exstipulate.

F.11 MENISPERMACEAE

Flowers unisexual, actinomorphic; sepals and petals usually in whorls of 3; stamens usually 6, free or united; carpels mostly 3 or more, free; style short; ovule 1; fruit drupaceous, endocarp horseshoe-shaped; style or stigma lateral, and frequently curved at maturity; seeds endospermic or otherwise; climbers; leaves, simple, alternate, exstipulate.

F.12 PAPAVERACEAE

Flowers bisexual, actinomorphic; sepals usually 2, deciduous; petals usually 4; stamens numerous; ovary superior, unilocular, with parietal placentas; stigma flat and sessile, radiating on disc-like summit of ovary; ovules numerous; fruit capsule; seeds endospermic; herbs; leaves simple, alternate, exstipulate.

F.13 ULMACEAE

Flowers uni- or bisexual, actinomorphic; perianth of 4-5 connate members; stamens 4-

8 or a few more; ovary superior, unilocular; ovule 1; styles 2 or single and deeply divided into 2 branches; fruit drupe; seeds without endosperm; trees or shrubs; leaves simple, alternate, stipulate.

F.14 MORACEAE

Flowers unisexual, minute; perianth of 4 (2-6) free or connate segments in 2 whorls; stamens 1 or equal in number to perianth segments; ovary superior-inferior, of 2 fused carpels, one aborting, unilocular; ovule 1; style with 2 stigmas or peltate; fruit small achene, drupe, or nut; seeds endospermic or otherwise; herbs, trees, shrubs or vines, rarely herbs, with latex; leaves simple, alternate or opposite, stipulate.

F.15 URTICACEAE

Flowers unisexual, actinomorphic; perianth mostly 3- or 5-cleft; stamens usually 3-5; ovary superior, usually unilocular; ovule 1; style simple or sessile and terminating in a tuft of cilia; fruit achene or nut, often enclosed at maturity in a dry or fleshy persistent perianth; seeds endospermic; trees, shrubs, or herbs, often with stinging hairs capable of inflicting a painful and persistent irritation; leaves simple, alternate or opposite, stipulate or exstipulate.

F.16 CASUARINACEAE

Flowers unisexual; perianth of 1-2 parts in male, lacking in female flowers; stamen 1; ovary minute, unilocular; ovules 2; style deeply divided into 2 long stigmatic branches; fruit much compressed nut produced at apex into membranous wing; enlarged and thickened woody bracts and bracteoles forming a compact cone, closing over unripe nuts and opening (as valves) when ripe; seed 1, without endosperm; trees or shrubs; leaves scale-like whorled.

F.17 NYCTAGINACEAE

Flowers bi- or unisexual, actinomorphic; perianth tubular, base persistent, enclosing fruit, upper portion deciduous or withering, with 5, rarely 4, lobes or teeth; stamens 1-20; ovary superior, unilocular; ovule 1; style 1; stigma undivided; fruit indehiscent; seeds endospermic; trees, shrubs, or herbs; leaves simple, opposite or alternate, exstipulate. In some genera the base of perianth adheres to fruit, producing an anthocarp which may be confused with an inferior ovary.

F.18 AIZOACEAE

Flowers bisexual, actinomorphic; perianth persistent, usually 5-4 parted or lobed, sometimes adnate to ovary; petals absent; stamens 4-numerous; ovary superior or inferior, 1-or-more locular; ovules 1 or more per loculus; styles as many as locules, usually filiform and with a stigma along inner side; fruit capsule, rarely fleshy and indehiscent; seeds endospermic; herbs or shrubs; leaves simple, opposite or alternate, often succulent, stipulate or exstipulate.

F.19 CACTACEAE

Flowers mostly bisexual, actinomorphic; perianth weakly differentiated into sepals and numerous petals; stamens numerous; inserted spirally or in groups, free or adnate to base of petals; ovary inferior or 3-many carpels, unilocular, with parietal placentas; ovules numerous; fruit berry; seeds numerous, without endosperm; fleshy herbaceous or woody plants of diverse habit, often very spiny; leaves alternate, simple, flat and leaf-like, or cylindrical, but usually scale-like or absent, alternate, exstipulate.

F.20 CHENOPODIACEAE

Flowers bi- or unisexual, actinomorphic; perianth small, 5-lobed; stamens 5, rarely fewer; ovary superior, unilocular; ovule 1; style or style branches 2-3; fruit irregularly dehiscent, membranous or succulent, nearly always enclosed in calyx at maturity; seeds usually perispermic; herbs or shrubs; leaves mostly alternate at maturity, exstipulate.

F.21 AMARANTHACEAE

Flowers bi- or unisexual, actinomorphic; perianth dry, membranous, often coloured, divided into 5 sepals or 5-lobed, persistent; stamens 5 or fewer; ovary superior, unilocular; ovules 1 or rarely more; styles 1-3; fruit usually 1-seeded berry, nut or capsule, mostly enclosed in calyx; seeds endospermic; herbs or undershrubs; leaves simple, opposite or alternate, exstipulate.

F.22 PORTULACACEAE

Flowers bisexual, actinomorphic, sepals usually 2; petals 4-5, sometimes perigynous; stamens mostly numerous; ovary superior or sometimes half-inferior, unilocular, with central placenta; ovules few or many; styles 3-8, free or united; fruit capsule; seeds, endospermic; mostly small succulent herbs; leaves simple, alternate or opposite, stipulate or exstipulate.

F.23 MOLLUGINACEAE

Flowers bisexual, sepals 5, free or slightly united at base; petals 5 or absent; stamens few or many; ovary superior, usually of 3-5 fused carpels; ovules 1-several per loculus; styles 3-5; fruit capsule, usually surrounded by persistent calyx; seeds endospermic, with or without aril; herbs; leaves simple, sometimes fleshy, opposite, subopposite, alternate, or subverticillate, stipulate or exstipulate.

F.24 CARYOPHYLLACEAE

Flowers usually bisexual, actinomorphic; sepals or calyx-lobes 4-5, persistent; 4-5 petals, or none; stamens definite; ovary superior, unilocular, with short or columnar basal placenta; ovules usually numerous; styles 2-5, stigmatic along inside; fruit capsule opening at top, rarely indehiscent; seeds endospermic; herbs often with thickened and jointed nodes; leaves simple, opposite, usually fused at base.

F.25 POLYGONACEAE

Flowers bi-or unisexual, actinomorphic; perianth of 4-6 members, usually in 2 whorls; stamens 4-8; ovary superior, unilocular; ovule 1; styles or style-branches 2-3; stigma terminal; fruit small nut, usually enclosed in persistent perianth; seeds endospermic; mostly herbs, shrubs, or climbers; leaves simple, alternate, stipules present, forming sheaths (ochrea) round stems.

F.26 PLUMBAGINACEAE

Flowers bisexual, actinomorphic; calyx tubular, with 5 prominent ribs usually ending in small teeth; petals 5, often united, twisted; stamens 5, opposite petals; anthers versatile; ovary superior, unilocular; ovule 1; fruit nut; seeds endospermic; herbs or shrubs; leaves simple, alternate, exstipulate.

F.27 DILLENIACEAE

Flowers bisexual, often zygomorphic; sepals usually 5, imbricate, persistent; petals 5, deciduous; stamens numerous; pistils several, dehiscent, usually free; seeds endospermic, arillate; shrubs or trees; leaves simple, alternate, simple; stipules minute or absent.

F.28 THEACEAE

Flowers unisexual, actinomorphic; sepals 5, usually persistent; petals 5 shortly connate; stamens 100-200 free; ovary superior, 2 locular, with axile placentas; ovules 1-2 per loculus; styles 2, stigmas simple or 2-3 branched; fruit capsule; seeds with little or no endosperm, and outer tissue fleshy; trees; leaves opposite or whorled, simple, leathery, exstipulate.

F.29 ELATINACEAE

Flowers bisexual, actinomorphic; sepals and petals 2-5; stamens as many; ovary superior, 2-5 locular with axile placentas (or unilocular by obliteration of septa); styles 2-5, short, persistent; stigmas capitate; fruit capsule; seeds without endosperm; mostly small herbs; leaves simple, opposite, stipulate.

F.30 CLUSIACEAE

Flowers usually uni-, or bisexual; sepals 2-10 or more, petals 4-12; stamens few or numerous, distinct or variously united, often collected into bundles; ovary superior, 3-5 locular, with axile-basal or infrequently parietal placentas; ovules 1-many on each placenta; styles as many as carpels and usually connate; fruit often capsule, sometimes a berry or drupe; seed without endosperm, often arillate; trees or shrubs, with resinous sap and oil glands; leaves simple, opposite or whorled, rarely alternate, exstipulate.

F.31 ELAEOCARPACEAE

Flowers bisexual, actinomorphic; sepals 4-5, free or united; petals 4, 5 or 0, free or united. Often much divided; stamens numerous, inserted on thick disc; anthers 2-locular, loculi sometimes confluent at apex; ovary superior, 1- locular, ovules 2- per loculus; fruit capsule or drupe; seeds endospermic; trees or shrubs; leaves simple, opposite or alternate, stipulate.

F.32 TILIACEAE

Flowers usually bisexual, actinomorphic; sepals 4-5; petals 4-5; stamens numerous, mostly free; ovary superior, 2-or-more locular; ovules 1 or several per loculus, style simple; fruit drupe or capsule; seeds usually endospermic; trees, shrubs, or rarely herbs; leaves simple, alternate, usually with mostly small deciduous stipules.

F.33 STERCULIACEAE

Flowers bi- or unisexual, actinomorphic, often imperfect; calyx usually 5-fid, epicalyx often present; petals 5, twisted in bud, frequently 0 or minute; stamens 5-15, free or united, often alternating with staminodes; ovary superior, usually 3-5 locular, or the carpels nearly distinct; ovules usually 2 or many; fruit dry, opening loculicidally, or the carpels free; seeds usually endospermic; shrubs or trees; leaves alternate, simple or compound, stipulate.

F.34 BOMBACACEAE

Flowers bi- or rarely unisexual, actinomorphic; calyx 5-fid, often with an epicalyx; petals 5; stamens numerous, filaments united into tube at base; anthers with 1 or more pollen-sacs; ovary superior, of 2-5 fused carpels; ovules 2 or more per loculus; style simple, lobed, or capitate; fruit capsule; seeds smooth but often embedded in hairs derived from ovary wall, endospermic or otherwise; trees; leaves simple, entire or palmately compound, alternate, stipulate.

F.35 MALVACEAE

Flowers usually bisexual, actinomorphic; calyx 5-fid, epicalyx often present; petals 5, twisted; stamens numerous, filaments united in tube and connate with base of petals; ovary superior, 3-many locular; ovules 1 or more per loculus; fruit dry, either loculicidally dehiscent or separating into component carpels; seeds endospermic or otherwise; herbs, shrubs, or trees; leaves simple, alternate, usually stipulate.

F.36 LECYTHIDACEAE

Flowers bisexual, actinomorphic or zygomorphic; sepals 4-6, free; petals 4-6, free or rarely fused; anthers numerous; ovary inferior, 2-several locular; ovules 1-several per loculus; fruit berry; seeds without endosperm; trees; leaves alternate, simple, exstipulate.

F.37 DROSERACEAE

Flowers bisexual, actinomorphic; sepals, petals, and stamens frequently 5, petals usually persistent; ovary superior, usually unilocular, with 2-5 parietal placentas; styles as many as placentas; fruit capsule; seeds numerous, endospermic; glandular herbs; leaves simple, alternate or verticillate, sometimes dichotomously divided, stipulate or exstipulate.

F.38 FLACOURTIACEAE

Flowers actinomorphic, often unisexual; sepals 4-5, persistent; petals as many as sepals or 0, deciduous; stamens numerous; ovary superior, unilocular, with 2 or more parietal placentas; ovules numerous; style simple, one or several; fruit berry; seeds usually few, endospermic; trees or shrubs, sometimes climbing; leaves alternate, simple, exstipulate.

F.39 BIXACEAE

Flowers bisexual, actinomorphic; sepals 4-5, free; petals 4-5 free; stamens numerous; ovary superior, locular, with 3-5 parietal placentas; ovules numerous; style single, with as many stigmas as placentas; fruit capsule; seeds endospermic; trees or shrubs; leaves alternate, simple, lobed, stipulate.

F.40 VIOLACEAE

Flowers bisexual, zygomorphic or actinomorphic; sepals and petals 5; stamens 5; anthers erect and connivent round pistil, connective usually produced beyond loculi; ovary superior, unilocular, with usually 3 parietal placentas; ovules several; style simple; fruit capsule; seeds endospermic; herbs or shrubs; leaves alternate, simple, stipulate.

F.41 TAMARICACEAE

Flowers bisexual, actinomorphic; sepals 4-5, fused at base; petals 4-5, free, stamens 4-numerous; ovary superior, unilocular; ovules numerous; styles single with as many stigmas as placentas; fruit capsule; seeds without endosperm; trees, leaves alternate, scale-like, simple, exstipulate.

F.42 FRANKENIACEAE

Flowers bisexual, actinomorphic; calyx tubular, persistent, furrowed, usually 4-5 lobed; petals usually 4-5; stamens 3-many, usually 6; ovary superior, unilocular, with 3, rarely 2-5 parietal placentas; ovules usually numerous; style single with as many stigmas as placentas; fruit capsule; seeds endospermic; shrubs, usually jointed at nodes; leaves simple, opposite or whorled, exstipulate.

F.43 PASSIFLORACEAE

Flowers bi- or unisexual, actinomorphic; calyx 4-5 lobed, often coloured; petals usually as many as calyx-lobes; stamens usually as many as calyx-lobes; disc often produced into numerous filiform segments forming a conspicuous corona; ovary superior, unilocular, with 3-5 parietal placentas; ovules numerous; styles 3, if single with as many stigmas as placentae; fruit berry or capsule; seeds endospermic, arillate; generally tendril climbers; leaves simple, palmately divided, alternate, stipulate or exstipulate.

F.44 CUCURBITACEAE

Flowers unisexual, actinomorphic; calyx-tube 5-toothed or 5-lobed; corolla 5-loved; stamens 5, but frequently connate into 3 (2 stamens with 4 pollen sacs and 1 stamen with 2 pollen sacs), inserted with corolla on calyx-limb; anthers adnate, usually very long and flexuous; ovary inferior, usually unilocular, with 2-5 parietal placentas; ovules usually numerous; style simple usually with stigmas as many as placentas; fruit usually indehiscent; seeds without endosperm; herbs, prostrate or tendril climbers; leaves simple, alternate, usually palmately veined, exstipulate.

F.45 CAPPARACEAE

Flowers bi- or unisexual, actinomorphic; sepals and petals usually 4; stamens numerous; ovary superior, unilocular, with parietal placentas; stigma sessile or nearly so; ovules usually numerous; fruit berry or capsule; seeds without endosperm; herbs, shrubs, or small trees; leaves simple, compound or absent, alternate, stipulate or exstipulate.

F.46 BRASSICACEAE

Flowers bi- or unisexual, actinomorphic; sepals 4, deciduous; petals 4 or 0, clawed; stamens usually 6, 2 of them shorter; ovary superior, usually divided into 2 loculi by membranous septum connecting 2 parietal placentas; style short, solitary or 0; fruit usually bilocular capsule opening by deciduous valves, leaving persistent septum; seeds without endosperm; mostly herbs; leaves simple, alternate, simple, dissected, exstipulate.

F.47 GYROSTEMONACEAE

Flowers unisexual, actinomorphic; perianth shortly tubular, entire or toothed; stamens 6-many; ovary superior with 1-many locules; ovules 1 per locule; style as many as locules, free or slightly connected; fruit schizocarp; seeds endospermic, arillate; trees or shrubs; leaves, simple, alternate; stipules present or absent.

F.48 BATACEAE

Flowers unisexual, actinomorphic, minute; male flower with calyx shallowly 2-lipped campanulate; petals 4, with claws united at base; stamens 4, free; female flower without perianth; ovary superior, originally bilocular, but divided by false septum to be 4-locular; ovule 1 per loculus; fruit berry, those of each inflorescence coherent into multiple structure; seeds without endosperm; low shrubs; leaves simple, opposite, fleshy, exstipulate.

F.49 EPACRIDACEAE

Flowers bisexual, actinomorphic; calyx usually of 5 sepals; corolla 5-lobed; stamens nearly always 5; ovary superior, usually 5-locular; ovules 1-few per loculus; style single; fruit drupe; seeds endospermic; shrubs or rarely trees; leaves simple, usually alternate, exstipulate.

F.50 SAPOTACEAE

Flowers bisexual, actinomorphic; calyx usually 5-lobed, corolla usually 5; stamens 5 inserted in corolla-tube and opposite lobes; ovary superior, 2-or-more locular; ovule 1 per loculus; fruit berry or drupe; seeds endospermic or otherwise; trees or shrubs; leaves simple, alternate, stipulate or exstipulate; frequently with milky sap.

F.51 EBENACEAE

Flowers bi- or unisexual, actinomorphic; calyx and corolla 3-5 lobed with corolla-lobes mostly twisted; stamens usually numerous; anthers erect; ovary superior, 3-or-more locular; ovules 1-2 per loculus; styles free or united; fruit berry; seeds few, endospermic; trees or shrubs; leaves simple, alternate, entire, exstipulate.

F.52 MYRSINACEAE

Flowers bi- or unisexual; calyx 5-4 lobed; corolla 5-4 lobed or petals rarely free, often twisted in bud; stamens 5-4, opposite corolla-lobes; ovary superior or half-inferior, unilocular, with basal and central placenta; ovules several; style single; stigma terminal; fruit drupe or berry, rarely dehiscent; seeds mostly endospermic; trees or shrubs; leaves simple, alternate, usually gland-dotted, exstipulate.

F.53 PRIMULACEAE

Flowers bisexual, actinomorphic; calyx usually 5-lobed, sometimes partially adnate to ovary; corolla usually 5-lobed; stamens 5, opposite to corolla-lobes; superior or half-inferior, unilocular, with basal central placenta; ovules numerous; style single; stigma capitate; fruit capsule; seeds endospermic; herbs; leaves simple, opposite or alternate, exstipulate.

F.54 PITTOSPORACEAE

Flowers bi- or rarely unisexual, actinomorphic; sepals and petals 5; stamens 5; ovary superior, unilocular but sometimes apparently 2-5 locular due to intrusive parietal placentas; ovules numerous; style simple, stigma capitate; fruit capsule; seeds usually several per loculus, endospermic; trees, shrubs, or twiners; leaves simple, alternate, exstipulate.

F.55 BYBLIDACEAE

Flowers bisexual, actinomorphic; sepals 5, free; petals 5, very shortly united at base; stamens 5, hypogynous or slightly united to base of petals; ovary superior, 2-locular; ovules numerous and axile; fruit capsule; seeds endospermic; herbs or half shrubs; leaves linear, alternate, glandular-pilose, exstipulate.

F.56 CRASSULACEAE

Flowers bisexual, actinomorphic; sepals usually 5; petals as many as sepals; stamens as many or twice as many as petals; pistils as many as petals, free, usually with small, flat scale at base of each; styles single, undivided; ovules several per pistil; fruit follicle; seeds endospermic; mostly succulent herbs; leaves simple, opposite, exstipulate.

F.57 CHRYSOBALANACEAE

Flowers bi- or unisexual, zygomorphic; calyx tubular 5-lobed; corolla of 5 free petals or lacking; stamens 2 to many; ovary superior, unilocular; ovules 2; style simple, lateral or gynobasic; fruit drupe or crustaceous berry; seeds without endosperm; trees or shrubs; leaves simple, alternate, exstipulate.

F.58 SURIANACEAE

Flowers usually bisexual, actinomorphic; calyx usually 5-lobed; petals usually 5, rarely 0; inserted with stamens in throat of calyx; stamens numerous; ovary of 1-numerous carpels, usually free; in fruit, carpels either free, or consolidated with each other or with calyx-tube; seeds usually without endosperm; trees, shrubs, or herbs; leaves often compound, alternate, usually stipulate.

F.59 MIMOSACEAE

Flowers bi- or unisexual, actinomorphic; calyx tubular, 5-lobed or toothed; petals 5, free or connate into short tube; stamens equal in number to sepals or numerous, free or monadelphous, often with deciduous gland at apex; ovary superior, of 1 or more free pistils; fruit a legume or dry and indehiscent; seeds without endosperm; trees or shrubs, very rarely herbs; leaves, bipinnate or rarely simple pinnate often converted to phyllodes, alternate, usually stipulate.

F.60 CAESALPINIACEAE

Flowers bisexual, zygomorphic, rarely subactinomorphic; sepals 5, free or 2 upper ones connate; petals 5 or fewer or 0, adaxial one inside; stamens 2-10, free or variously connate; ovary superior, unilocular, with marginal placenta; fruit legume or dry and indehiscent, often winged; seeds endospermic or otherwise; trees, shrubs, rarely herbs; leaves alternate, simple pinnate or bipinnate, rarely simple or unifoliolate, mostly stipulate.

F.61 FABACEAE

Flowers bi-or unisexual, zygomorphic; sepals usually 5, more or less connate into tube; petals 5, free, adaxial (upper) exterior and forming standard, 2 lateral (wings) more or less parallel with each other, lower 2 interior and connate by their lower margins (keel); stamens, often 10, monadelphous or diadelphous; ovary superior, 1-locular, with marginal placenta; fruit usually a legume, rarely dry indehiscent, sometimes jointed and breaking up into 1-seeded segments; seeds without endosperm; herbs, shrubs, trees or twiners; leaves simple or compound, rarely reduced to scales, opposite, alternate or whorled, often stipulate.

F.62 PROTEACEAE

Flowers usually bisexual, actinomorphic or zygomorphic; perianth members 4, deciduous, usually more or less united, often split on one side; stamens 4, inserted on perianth-lobes; ovary superior, unilocular, more or less eccentric; ovules 1 or more; style single, undivided; fruit nut, drupe, follicle, or capsule; seeds without endosperm; trees or shrubs; leaves simple sometimes deeply dissected, alternate, exstipulate.

F.63 PODOSTEMACEAE

Flowers bisexual, minute, enclosed when young in spathe; perianth undifferentiated, of 2-3 free or basally fused, actinomorphic or zygomorphic; stamens 1-3; ovary superior, 2-3 locular, with axile placentas; styles as many as locules; stigmas simple or laciniate; ovules numerous; fruit capsule; seeds minute, without endosperm; submerged moss-like freshwater herbs growing mostly in running water; leaves linear to lamellate, alternate or whorled, often sheathing, exstipulate.

F.64 HALORAGACEAE

Flowers bi- or unisexual, actinomorphic; calyx usually 2-4 lobed, or 0; petals 2-4, or 0; stamens 1-8; filaments short; anthers erect; ovary inferior, 1-4 locular; ovules 2 or several per loculus; styles 1-4; stigmas papillose or plumose; fruit nut, or divisible into 2-4 segments; seeds endospermic; herbs or rarely undershrubs, often aquatic; leaves opposite, alternate, or whorled, simple, exstipulate.

F.65 SONNERATIACEAE

Flowers bi- or unisexual, actinomorphic; sepals 4-8 fused; petals 4-8 free, or 0; stamens numerous; ovary superior, 4-15 locular, with axile placentas; ovules numerous; style simple, capitate; fruit berry; seeds without endosperm; trees or shrubs (mangroves); leaves simple, opposite, exstipulate.

F.66 LYTHRACEAE

Flowers bisexual, actinomorphic; calyx-tubes enclosing ovary but free from it, persistent, usually with 4-5 teeth; petals 4-5, rarely 0, inserted at top of calyx-tube; stamens usually definite, inserted at or below middle of calyx-tube; ovary superior, 2-or-more locular; style 1; ovules usually numerous; fruit capsule; seeds without endosperm; herbs, shrubs, or trees; leaves simple, usually opposite, entire, exstipulate.

F.67 THYMELAEACEAE

Flowers bi- or unisexual, actinomorphic; calyx tubular or campanulate, usually 4-lobed; petals usually 0; stamens 2-8, inserted on calyx-tube; ovary superior, 1-8 locular; ovule 1 per locule; stigma capitate; style single; fruit drupe, nut or capsule; seeds endospermic or otherwise; trees, shrubs, or herbs; leaves simple, opposite or alternate, entire, stipulate or exstipulate.

F.68 ONAGRACEAE

Flowers bisexual, actinomorphic; calyx-tube adnate to ovary, often ribbed; lobes usually 4-5; petals as many as calyx-lobes, inserted with stamens at top of calyx-tube; stamens usually definite; ovary inferior, with as many loculi as calyx-lobes; style single; ovules usually numerous; fruit capsule; seeds without endosperm; herbs; leaves alternate, opposite, or whorled, simple, usually exstipulate.

F.69 MELASTOMATACEAE

Flowers bisexual, actinomorphic; calyx-tube more or less adnate to ovary, limb entire or with 3-6 lobes: petals as many as calyx-lobes, usually twisted in bud; stamens generally twice as many as petals, connective of anther usually spurred; ovary superior or inferior, mostly 2-6 locular, axile placentas; style single; fruit combined with calyx-tube, berry or capsule; seeds without endosperm; herbs, shrubs, or rarely trees; leaves opposite, simple, usually palmately veined, exstipulate.

F.70 COMBRETACEAE

Flowers bi- or unisexual, actinomorphic; sepals 3-8, free; petals 3-8, free or 0; stamens 10-numerous; ovary inferior, unilocular; ovules 2-5; fruit dry or drupaceous, often winged; seeds without endosperm; trees, shrubs, or climbers; leaves opposite or alternate, simple, stipulate.

F.71 MYRTACEAE

Flowers bi- or unisexual, actinomorphic; calyx-tube adnate to ovary, limb usually 4-5 or many-lobed; petals as many as calyx-lobes, occasionally absent or sepals and/or petals fused to form an operculum; stamens usually numerous; ovary inferior or half inferior, 2-or-more locular, with ovules numerous, rarely unilocular, with few ovules; style single; stigma usually capitate, small; fruit capsule or berry; seeds without endosperm; trees or shrubs; leaves simple, opposite or alternate, entire, gland-dotted; stipulate or exstipulate.

F.72 RHIZOPHORACEAE

Flowers bisexual, actinomorphic, calyx-tube adnate to ovary, limb 4-12 parted, persistent; petals as many as calyx-lobes; stamens usually two or three times as many as petals; ovary superior, inferior, or half-inferior, usually 2-or-more locular; style single, undivided; ovules few per loculus; fruit usually unilocular, and 1-seeded, leathery, crowned by calyx-limb; seeds usually without endosperm; trees or shrubs; leaves opposite, simple; stipules often large, deciduous.

F.73 OLACACEAE

Flowers bi- or unisexual, actinomorphic; calyx 4-5 toothed, often minute; petals 4-6, free or united; stamens from few to twice as many as petals; ovary superior, unilocular, or imperfectly 2-3 locular; style simple; stigma entire or lobed; ovules 1-3; fruit drupe; seed 1, endospermic; trees or shrubs; leaves simple, alternate, exstipulate.

F.74 OPILIACEAE

Flowers bi- or unisexual; calyx minute sometimes not distinguishable, entire or 4-5-toothed; petals 4-5, free or more or less united; stamens 4-5, free or united to base of petals; lobes of nectary-disk alternating with stamens; ovary superior or semi-inferior, unilocular; style single, stigma entire or lobed; ovule 1; fruit drupe; seed endospermic; trees, shrubs, or woody climbers; leaves simple, alternate, exstipulate.

F.75 SANTALACEAE

Flowers bi- or unisexual, actinomorphic; calyx-tube usually adnate to ovary and indistinguishable from corolla, with 3-5, rarely 6 segments; stamens as many as corolla-lobes and opposite to them; ovary superior or inferior, usually unilocular, with free central placenta; ovules 1-5; style simple; fruit nut or drupe; seed 1, endospermic, lacking testa; herbs, shrubs, or small trees, occasionally parasitic; often reduced to minute scales, leaves alternate or opposite, exstipulate.

F.76 LORANTHACEAE

Flowers bi- or unisexual, actinomorphic; calyx-tube much reduced; 4-12, free or fused; stamens as many as petals and fused to them; ovary inferior; loculi l-several; ovules not distinct, included in placenta; style single; fruit baccate; seeds endospermic or otherwise; semi-parasitic shrubs on branches of trees or shrubs (including other mistletoes); leaves simple, mostly opposite, exstipulate.

F.77 VISCACEAE

Flowers unisexual, actinomorphic; perianth single of 2-4 members; stamens 2-4, free or fused to perianth members; ovary inferior, unilocular; ovules not distinct, included in placenta; stigma sessile; fruit baccate; seeds endospermic; semi-parasitic shrubs on branches of trees and shrubs (including other mistletoes); leaves simple, mostly opposite, exstipulate.

F.78 CELASTRACEAE

Flowers bi- or unisexual, actinomorphic; calyx small, 4-5 toothed; petals 4-5; stamens usually as many as petals; ovary superior, 2-several locular; ovules 2 per locule; style single; stigma entire or lobed; fruit capsule, berry or drupe; seeds often enveloped in aril, endospermic or otherwise; trees or shrubs, sometimes climbing; leaves simple, alternate or opposite; stipules minute or lacking.

F.79 HIPPOCRATEACEAE

Flowers bisexual, actinomorphic; sepals 5 united at base; petals 5, rarely fewer, free; stamens 2-5 filaments, often thickened; ovary superior, 3-5 locular, with axile placentas; ovules 2- per loculus; fruits fleshy or capsular; seeds without endosperm; trees or woody climbers; leaves simple, opposite or alternate, stipulate.

F.80 STACKHOUSIACEAE

Flowers bisexual, actinomorphic; calyx 5-lobed; petals 5, free at base but often united above; stamens 5; ovary superior, 3-5 locular and lobed; ovule 1 per loculus; style single; stigma lobes as many as locules; fruit of 3-5 indehiscent segments seceding from persistent axis; seeds endospermic; herbs; leaves, simple, alternate, stipules minute or lacking.

F.81 AQUIFOLIACEAE

Flowers unisexual, actinomorphic; sepals 4-5, sometimes much reduced; petals 4-5, free or fused; stamens 4-6, usually fused to base of petals; ovary superior, 4-12 locular; ovules 1-2 per loculus; style single, or lacking; stigmas as many as locules; fruit a drupe; seeds endospermic; trees or shrubs; leaves alternate, simple, exstipulate.

F.82 EUPHORBIACEAE

Flowers uni- or bisexual, actinomorphic; calyx usually 5-lobed; petals often 0; stamens 1-many, free or monadelphous; ovary superior, 2-many locular; ovules 1 or 2 per locule; styles 3-4, free or united at base, usually stigmatic along inner side; fruit either capsule, separating into 3 2-valved carpels leaving persistent axis, or rarely succulent; seeds endospermic; trees, shrubs, or herbs; leaves simple, opposite or alternate and stipulate or lacking stipules; milky latex sometimes present.

F.83 RHAMNACEAE

Flowers uni- or bisexual, actinomorphic, calyx-tube fused to ovary or almost free, 4-5 lobed, deciduous; petals 4-5, concave, minute or 0; stamens 4-5 opposite petals inserted on calyx-tube; ovary superior, often embedded in disc, 2-4 locular; style short; stigmas as many as loculi; ovule 1 per loculus; fruit drupe or capsule; seeds usually endospermic; shrubs, trees, or rarely climbers; leaves alternate or opposite, simple, stipulate.

F.84 LEEACEAE

Flowers bisexual, actinomorphic; sepals 4-5, cupular; petals united into tube with 5 spreading or recurved lobes; disc (resembling staminal tube) cup-shaped, conical or nearly globular, 5-lobed, enclosing ovary; stamens inserted in grooves outside disc, filaments incurved at top with anthers inside disc in bud; ovary superior, enclosed in disc, 3-6 locular; ovule 1 per loculus; fruit berry; seeds endospermic; shrubs or small trees; leaves compound, alternate, exstipulate.

F.85 VITACEAE

Flowers mostly bisexual, actinomorphic; calyx small, entire or obscurely 4-5 toothed, persistent; petals 4-5; stamens 4-5, opposite petals, inserted on outside of thick disc; ovary superior, 2-6 locular; style simple, usually short; stigma capitate; fruit berry, usually adnate to calyx at base only; seeds bony, endospermic; woody climbers, usually with articulate branches and leaf-opposed tendrils; leaves, simple or compound, alternate; stipules usually membranous.

F.86 ERYTHROXYLACEAE

Flowers bisexual, actinomorphic sepals and petals usually 5; stamens definite, often united into short tube at base, and with 5 glands; ovary superior, 3-5 locular; styles 3-5, with capitate stigmas; ovules usually 2 per loculus; fruit a drupe; seeds endospermic or otherwise; trees or shrubs; leaves simple, alternate, stipulate.

F.87 POLYGALACEAE

Flowers bisexual, zygomorphic; sepals 5, two inner ones (called wings) usually larger and petal-like; petals usually 3, larger one in front (called keel) concave, enclosing stamens and ovary, 2 lateral ones tooth-like, short, adnate to stamens; stamens usually 9, united to above middle in split sheath; ovary superior, bilocular; style simple; ovule 1 per loculus; fruit capsule; seed with or without endosperm; herbs or undershrubs; leaves simple, alternate, exstipulate.

F.88 SAPINDACEAE

Flowers bi-or unisexual, often zygomorphic; sepals 4-5; petals as many as sepals or 1 fewer, or 0; stamens 6-numerous, inserted between ovary and disc; ovary superior, with 1-6-locules, often lobed; style simple; stigmas 2-4-lobed; ovules 1-2 per loculus; fruit berry or capsule or separating into its component carpels; seeds frequently with fleshy aril, without endosperm; mostly trees or shrubs; leaves alternate, simple or compound, usually exstipulate.

F.89 BURSERACEAE

Flowers bi- or unisexual, actinomorphic; sepals 3, more or less basally connate; petals 3; disc present; stamens 6; ovary superior 3-locular, with axile placentas; ovules 2 or rarely 1 per loculus; style single; stigma lobes as many as locules; fruit drupe; seeds without endosperm; trees or shrubs, secreting resin or oil; leaves pinnate, alternate, stipulate.

F.90 ANACARDIACEAE

Flowers bi- or unisexual, actinomorphic; calyx 4-6 lobed; petals 4-6; disc usually annular or broad; stamens as many or twice as many as petals and alternating with them, inserted round disc; ovary superior, 1 locular; ovule 1; styles 1-3; fruit a drupe; seeds with or without endosperm; trees or shrubs; leaves, simple or pinnate, alternate or opposite, exstipulate.

F.91 SIMAROUBACEAE

Flowers bi- or unisexual, actinomorphic, calyx 4-5 lobed; petals 4-5; stamens as many or twice as many as petals; ovary superior, 4-5 lobed, or, if distinct carpels, styles free or united; ovule usually 1 per loculus; fruit drupaceous; seeds endospermic; shrubs or trees; leaves trifoliate, pinnate, alternate, stipulate or exstipulate.

F.92 MELIACEAE

Flowers bi- or unisexual, actinomorphic; calyx 4-5 lobed; petals 4-5; stamens as many or twice as many as petals, filaments very frequently united in tube; ovary usually superior, 3-5 locular; style simple; stigma thick; ovules 1-several per loculus; fruit capsule or drupe; seeds endospermic or otherwise, sometimes arillate; trees or shrubs; leaves simple or compound, alternate, exstipulate.

F.93 RUTACEAE

Flowers bisexual, actinomorphic; sepals 4-5; petals 4-5; stamens as many or twice as many as petals, rarely more, usually free; ovary superior, consisting of 4-5 more or less united or free carpels; styles usually united; ovules 1-several per loculus; fruit separating either into usually 2-valved carpels, with endocarp separating elastically from pericarp, or whole fruit indehiscent and often succulent; seeds with or without endosperm; strongly scented herbs, shrubs or trees; leaves simple or compound, opposite or alternate, gland-dotted, exstipulate.

F.94 ZYGOPHYLLACEAE

Flowers usually bisexual, actinomorphic; sepals 4-5, petals 4-5; stamens 5, 10 or 15; ovary superior, 4-5 locular, with single style; stigma simple or lobed; ovules 1-5 per loculus; fruit drupe, capsule or schizocarp; seeds endospermic or otherwise; herbs or shrubs, often somewhat succulent; leaves simple or compound, alternate or opposite, stipulate.

F.95 OXALIDACEAE

Flowers bisexual, actinomorphic, sometimes heterostylic; sepals 5; petals 5, distinct or basally connate; stamens 10 (sometimes 5 reduced to staminodes) basally connate, in 2 series; ovary superior, 5-locular; ovules 1 or more per loculus; styles as many as locules; fruit capsule; seeds endospermic, sometimes arillate; herbs with rhizomes or bulb-like tubers; leaves trifoliolate, alternate or radical, exstipulate.

F.96 GERANIACEAE

Flowers bisexual, often slightly zygomorphic, sepals 5; petals 5; stamens usually 10, mostly connate at base; ovary superior, 5-locular; ovules 2 per locule; style single with 5 short stigmas; fruit schizocarp, or capsule; seeds endospermic or otherwise; herbs or shrubs; leaves simple, alternate or opposite, mostly stipulate.

F.97 ARALIACEAE

Flowers mostly bisexual, actinomorphic; calyx-tube truncate, minutely toothed or rarely lobed; petals 5-20; stamens as many as petals; ovary inferior, with 2 or rarely more loculi; ovule 1 per loculus; styles as many as locules; fruit often succulent; usually with 2 hard, laterally flattened 1-seeded pyrenes; seeds endospermic; trees or shrubs; leaves alternate, compound, stipulate.

F.98 APIACEAE

Flowers usually bisexual, actinomorphic; calyx 5 toothed or reduced to a rim; petals 5, rarely very small or absent; stamens 5; ovary inferior, usually 2-locular; ovule 1 per loculus; styles 2; fruit usually separating into 2 dry, indehiscent, 1-seeded carpels, often leaving filiform central axis (called "carpophore"); each carpel usually marked with longitudinal ribs, and frequently with linear oil-vessels (called "vittae") between them; seeds endospermic; herbs or shrubs; leaves simple, usually alternate, petiole often sheathing, usually exstipulate.

F.99 LOGANIACEAE

Flowers usually bisexual, actinomorphic; calyx 4-5 lobed corolla usually 4-5 lobed; stamens 4-5 epipetalous; ovary superior or half inferior, usually 2-locular, with axile placentation; styles 2, free or united at base; ovules 1 or more per loculus; fruit capsule or berry; seeds endospermic; herbs, shrubs, or trees; leaves simple, opposite, stipulate or exstipulate.

F.100 GENTIANACEAE

Flowers bisexual, actinomorphic; calyx and corolla usually 5-lobed; stamens 5, epipetalous and alternate with lobes; ovary superior, usually unilocular, with 2 parietal placentas; style single; ovules numerous; fruit capsule; seeds endospermic; glabrous herbs; leaves simple, usually opposite, exstipulate.

F.101 APOCYNACEAE

Flowers bisexual, actinomorphic; calyx usually 5-parted; corolla 5-lobed, twisted in bud; stamens 5, epipetalous; ovary superior or half-inferior, 1-2 locular, or consisting of 2 distinct carpels united only by style; stigma usually dilated; ovules 2 or more per loculus; fruit usually separating into 2 distinct carpels; seeds usually endospermic; trees, shrubs, lianes or herbs; leaves simple, alternate, opposite or whorled; with small gland-like stipules.

F.102 ASCLEPIADACEAE

Flowers bisexual, actinomorphic; calyx 5-parted; corolla tubular deeply 5-lobed, twisted in bud; stamens 5, epipetalous; filaments short, usually connate and with dorsal appendages (called corona); anthers connate with stigma into a mass (called gynostemium); ovary superior, usually consisting of 2 distinct carpels, united only by style; stigma usually dilated; ovules numerous; fruiting-carpels dry, longitudinally dehiscent; seeds endospermic; herbs or shrubs frequently twining, rarely trees; sap often milky; leaves simple, sometimes reduced to scales, opposite; stipules 0 or very obscure.

F.103 SOLANACEAE

Flowers bisexual, actinomorphic or slightly zygomorphic; calyx usually 5-lobed or 5-toothed; corolla nearly always 5-lobed; stamens 5, epipetalous, or 4 and frequently with rudiment of fifth; ovary superior, usually 2-locular; fruit berry or capsule; seeds endospermic; herbs, shrubs, or rarely trees; leaves simple, alternate, exstipulate.

F.104 CONVOLVULACEAE

Flowers bisexual, actinomorphic; calyx persistent, usually divided into 5 sepals; corolla usually 5-angled and folded in bud; stamens 5, epipetalous, alternating with lobes; ovary superior, usually 2-or-more locular; ovules few; styles 1-2; fruit capsule; seeds scarcely endospermic; mostly climbing or creeping herbs; leaves simple, alternate, exstipulate.

F.105 CUSCUTACEAE

Flowers bisexual, actinomorphic; calyx of 4-5 free or fused parts; corolla 4-5 lobed; A 4-5 alternating with staminodes, epipetalous; ovary superior, 2-locular; ovules 2 per locule; style simple; fruit dry or fleshy capsule; seeds endospermic; leafless and rootless thread-like total parasites attaching to hosts by conspicuous suckers.

F.106 MENYANTHACEAE

Flowers bisexual, actinomorphic; calyx 5-lobed or 5-partite; corolla 5-lobed; stamens 5, epipetalous; ovary superior or half-inferior, unilocular, with 2 parietal placentas; ovules few to numerous; style single; fruit capsule; seeds endospermic; aquatic or marsh herbs; leaves peltate, alternate and orbicular, exstipulate.

F.107 HYDROPHYLLACEAE

Flowers bisexual, actinomorphic; calyx 5-lobed; corolla mostly 5-lobed; stamens mostly 5, epipetalous; staminodes present or 0; ovary superior, of 2 fused carpels, typically unilocular, with 2 parietal more or less intruding placentas; ovules numerous; fruit capsule; seeds endospermic; herbs, often hairy, glandular or bristly; leaves simple, alternate or opposite, often basal, exstipulate.

F.108 BORAGINACEAE

Flowers bisexual, actinomorphic, or nearly so; calyx usually deeply 5-lobed; corolla usually tubular and 5-lobed; stamens usually as many as corolla-lobes, epipetalous and alternate with them; ovary superior 4- or 2-lobed; ovules 1-2 per loculus; fruit schizocarpic, pericarp dry or fleshy separating into four 1-seeded or two 2-seeded segments; seeds endospermic or otherwise; herbs, rarely shrubs or trees; leaves simple, alternate, exstipulate.

F.109 VERBENACEAE

Flowers bisexual, usually zygomorphic; calyx 4-5 lobed; corolla 4-5 lobed; stamens 2, 4 or 5, epipetalous; ovary superior, entire or shortly 4-lobed, usually 2-4 locular; ovule 1 per loculus; style single, terminal; fruit drupe, capsule, or schizocarp; seeds endospermic or otherwise; herbs, shrubs, lianes, or trees; leaves mostly opposite, rarely whorled or alternate, simple or compound, exstipulate.

F.110 LAMIACEAE

Flowers bisexual, usually zygomorphic; calyx 5-lobed; corolla 4-5 lobed; stamens 2 or 4, usually didynamous, epipetalous; ovary superior, 4-lobed; ovules 4; style usually gynobasic, rarely terminal; stigma usually 2-lobed; fruit usually consisting of 4 small nutlets, rarely drupe; seeds mostly without endosperm; herbs or shrubs; leaves simple, opposite or whorled, exstipulate.

F.111 PLANTAGINACEAE

Flowers bi- or unisexual, actinomorphic; calyx 4-lobed; corolla with 4 spreading lobes: stamens usually 4, epipetalous; ovary superior, usually 2-locular, ovules 1 to many per locule; style simple, with 2 opposite stigmatic lobes; fruit dry, mostly opening transversely; seeds endospermic; leaves all basal or nearly so, commonly alternate, venation seemingly parallel, bases often sheathing, exstipulate.

F.112 OLEACEAE

Flowers bisexual, actinomorphic; calyx and corolla usually 4-5 lobed, or petals sometimes free; stamens 2, epipetalous; filaments usually short; ovary superior, bilocular; ovules 1-2 per loculus; style 1; fruit berry or drupe; seeds endospermic or otherwise; trees or shrubs, sometimes climbing; leaves simple or trifoliate, usually opposite, exstipulate.

F.113 SCROPHULARIACEAE

Flowers bisexual, actinomorphic or zygomorphic; calyx mostly 5-toothed, or 5-parted; corolla 5-partite; stamens 2 or 4, more or less didynamous, epipetalous, fifth stamen often rudimentary; ovary superior, 2-locular; ovules several per loculus; style single, undivided or 2-lobed; stigma usually 2-lobed; fruit capsule; seeds endospermic; herbs or rarely shrubs; leaves opposite or alternate, simple, exstipulate.

F.114 MYOPORACEAE

Flowers bisexual, zygomorphic; calyx persistent, usually 5-lobed; corolla 5-4 lobed, often 2-lipped; stamens usually 4, epipetalous; ovary superior, 2-4 locular; ovules 1 or several per loculus; style single, undivided or notched; fruit drupe, 1-4 locular; seeds 1-4 per loculus, endospermic; shrubs or small trees; leaves usually alternate, often gland-dotted, simple, exstipulate.

F.115 OROBANCHACEAE

Flowers bisexual, zygomorphic; calyx tubular mostly 5-toothed; corolla 5-lobed, two-lipped; stamens 4, epipetalous; ovary superior, unilocular, placentas parietal; ovules numerous; style simple, stigma capitate or 2-lobed; fruit capsule; seeds endospermic; herbs parasitic on roots; leaves reduced to scales, alternate, exstipulate.

F.116 ACANTHACEAE

Flowers bisexual, zygomorphic; calyx 5-parted; corolla tubular, 5-lobed, often 2-lipped; stamens 2 or 4, epipetalous, didynamous; ovary superior, 2-locular; ovules 2 or more; style single, stigma undivided or 2-lobed; fruit capsule, opening in 2 valves, usually elastically recurved; seeds usually flattened and attached to hooked processes (retinacula) arising from septum, without endosperm; herbs or rarely trees; leaves opposite, simple, exstipulate (except for Acanthus).

F.117 PEDALIACEAE

Flowers bisexual, zygomorphic; calyx of 4-5 basally connate sepals; corolla usually broadly tubular, 5-lobed, somewhat bilabiate; stamens usually 4, didynamous, epipetalous, with fifth stamen represented by staminode; ovary mostly superior, of 2 fused carpels, 2- or 4-locular (at maturity), with axile placentas; ovules 1-many; fruit capsule or nut; seeds endospermic; herbs or shrubs; leaves opposite, simple, glandular, exstipulate.

F.118 BIGNONIACEAE

Flowers bisexual, zygomorphic; calyx truncate or shortly 5-toothed; corolla with 5 spreading lobes, often 2-lipped; stamens 2 or 4, didynamous, epipetalous, ovary superior, usually 2-locular, with 2 placentas per loculus; style 1; stigma 2-lobed; fruit capsule; seeds without endosperm; tall shrubs or trees, often climbing; leaves opposite exstipulate.

F.119 LENTIBULARIACEAE

Flowers bisexual, zygomorphic; calyx 2-5 lobed; corolla 2-lipped; stamens 2, epipetalous; ovary superior, unilocular, with free central placenta; stigma 2-lobed, sessile or nearly so; ovules several; fruit capsule; seeds without endosperm; mostly aquatic herbs; leaves floating, radical or absent, sometimes deeply dissected; exstipulate.

F.120 SPHENOCLEACEAE

Flowers bisexual, actinomorphic; calyx-tube adnate to ovary, limb usually 3-lobed, persistent; corolla usually 5-lobed; stamens as many as corolla-lobes, epipetalous; ovary inferior, 2-or-more locular; style simple, or 2-or-more lobed; fruit capsule; seeds numerous, small, endospermic; herbs or undershrubs, often with a milky juice; leaves usually alternate, simple, exstipulate.

F.121 CAMPANULACEAE

Flowers uni- or bisexual, actinomorphic or zygomorphic; calyx 5-lobed; corolla tube 5-lobed, regular or divided into 2 lips, one 3- the other 2-lobed; stamens if present 5, epipetalous, anthers free or united around the style; ovary inferior 2-5 locular; style 1; stigma lobes as many as locules, fruit capsule; seeds numerous, small, endospermic; herbs usually with a milky sap; leaves opposite or alternate, simple, exstipulate.

F.122 STYLIDIACEAE

Flowers bisexual, usually zygomorphic; calyx-tube 5-parted; corolla deeply 5-lobed, lowest lobe usually diminutive; stamens 2, epipetalous, filaments connate with style into column; pollen sacs at length divaricate; stigmas often concealed between anthers; ovary inferior, mostly 2-locular; ovules numerous; fruit capsule; seeds endospermic; mostly herbs; leaves radical tufted or alternate, usually exstipulate.

F.123 BRUNONIACEAE

Flowers bisexual, actinomorphic; calyx-tube 5-lobed; corolla 5-lobed; stamens 5, epipetalous; anthers connate around style; ovary superior, unilocular, of 1 carpel; ovule 1; fruit nut; seed without endosperm; perennial herbs; leaves simple radical, exstipulate.

F.124 GOODENIACEAE

Flowers bisexual, mostly very zygomorphic; calyx-limb 5-fid, persistent; corolla 5-lobed, tube usually slit open on one side; stamens 5, epipetalous; anthers with 4 pollen sacs, free or united; ovary superior or inferior, 1-2 locular; style simple; stigma enclosed in mostly ciliate "indusium"; ovules few or numerous; fruit capsule, drupe, or nut; seeds usually endospermic; herbs, rarely shrubs; leaves alternate or radical, exstipulate.

F.125 RUBIACEAE

Flowers usually bisexual, actinomorphic; calyx 4-6 lobed; corolla 2-5 lobed; stamens 4-5; ovary inferior, 2-or more-locular; ovules 1 or more per loculus; style single, stigmas two; fruit capsule, berry, drupe or nut; seeds usually endospermic; trees, shrubs, herbs or climbers; leaves simple, opposite or whorled; stipules interpetiolar and membranous, rarely absent.

F.126 ASTERACEAE

Flowers bi- or unisexual, actinomorphic or zygomorphic; usually in terminal homogamous or heterogamous heads surrounded by involucral bracts; calyx replaced by a ring of hairs, spines, or scales (called pappus), or lacking; corolla either "tubular" (i.e. broad and regularly 5-or rarely 3- or 4-toothed), or "filiform" (i.e. narrow and irregularly toothed), or "ligulate" (i.e. with slender tube and one-sided lamina), rarely lacking; stamens 5, rarely 4, epipetalous; anthers usually connate round style; ovary inferior, unilocular; ovule 1; style filiform, 2-branched in fertile flowers; fruit achene or drupe; seeds without endosperm; herbs or shrubs; leaves simple, opposite or alternate, exstipulate.

2. FAMILY DESCRIPTIONS OF LILIATAE

F.127 LIMNOCHARITACEAE

Flowers bisexual, actinomorphic; sepals 3; petals 3; stamens 3, 6 or numerous; ovary 3-9 carpels shortly fused at the base; locules as many as carpels, with laminar placentation; ovules numerous; styles short; fruit a series of follicles; seeds lacking endosperm; perennial herbs, rooting or free floating.

F.128 ALISMATACEAE

Flowers bi- or unisexual, actinomorphic; sepals 3, thin or almost herbaceous; petals 3, larger than sepals, often white, fugacious; stamens usually 6, free; anthers erect; carpels 3 or more, free or nearly so, tapering into short styles; ovules 1-several per loculus; seeds without endosperm; fruit an achene; marsh or freshwater plants; leaves basal, petioles sheathing, erect or floating.

F.129 HYDROCHARITACEAE

Flowers mostly unisexual, actinomorphic, calyx of male flowers divided to base into 3 sepals; calyx of female flower with tube adherent to ovary; petals often very tender and fugacious; stamens 3-12; ovary inferior, 1-several locular; styles 1-9; ovules numerous, scattered over surface; fruit indehiscent, ripening under water, seeds without endosperm; aquatic herbs; leaves undivided, basal or cauline, alternate, opposite, or whorled, usually sessile.

F.130 APONOGETONACEAE

Flowers usually bisexual (or unisexual by abortion); perianth lacking or of 1-3 petaloid segments; stamens mostly 6 or more, free; gynoecium of 3-6 sessile carpels; ovules 2 or more; fruit follicle; seeds without endosperm; aquatic freshwater perennials; leaves mostly basal, floating or submerged, with long petioles.

F.131 JUNCAGINACEAE

Flowers bi- or unisexual; perianth of 6 free segments in 2 series; stamens usually 6, free; gynoecium of 3-6 carpels, coherent or weakly connate at the base; ovules 1-few; fruit follicle; seeds without endosperm; marsh herbs, perennial, rush-like; leaves basal or cauline, flat, linear, sheathing basally, ligulate.

F.132 POTAMOGETONACEAE

Flowers bi- or unisexual; actinomorphic, perianth variable, of 4-6 segments in one whorl or tubular or cup-shaped or lacking; stamens 1-4; ovary superior, of 1 carpel, with parietal or pendulous placenta; ovule 1, fruit nutlet or drupelet; seed without endosperm; aquatic or very rarely marsh or bog perennials; leaves with sheathing bases, often ligulate, blades submerged or floating.

F.133 RUPPIACEAE

Flowers bisexual, small; perianth lacking; stamens 2, with very short, broad filaments; loculi reniform and separated by connective; gynoecium of 4 or more carpels; stigmas peltate or umbonate; ovule 1; fruiting carpels long, stipulate, with spirally twisted stalks, indehiscent; seeds without endosperm; aquatic herbs of saline marshes; leaves opposite or alternate, linear or setaceous, sheathing at base.

F.134 NAJADACEAE

Flowers unisexual, very small, borne at base of branches; male flower with 1 stamen, mostly subsessile and included in spathe; perianth 2-lipped at apex; anther sessile 1-4 locular, opening by slits lengthwise; female flower without perianth or this very thin and adhering to carpel; ovary superior, unilocular; stigmas 2-4; ovule 1; fruit usually embraced by leaf-sheath, indehiscent; seed with straight embryo with large hypocotyl and radicle, without endosperm; small, submerged annual water-plants in fresh or brackish water; leaves, subopposite or verticillate, sessile, with sheathing base and linear, entire or toothed blade; within sheath of pair of minute scales.

F.135 CYMODOCEACEAE

Flowers uni- or bisexual; perianth absent or of minute bracts; male flower with 2 stamens; female flower of 1 or 2 fused carpels; ovule 1; styles and stigmas filiform; fruit nutlet; seeds without endosperm; submerged marine herbs; leaves simple, alternate exstipulate.

F.136 ARECACEAE

Flowers uni- or bisexual, actinomorphic; sepals usually 3, often partly united; petals 3, generally longer than sepals, all frequently glumaceous; stamens 3-numerous; ovary superior, tri- or unilocular; ovules 1 or rarely 2 per loculus; style short, mostly trifid; fruit usually unilocular and 1-seeded; seed endospermic; trees, shrubs, or climbers; leaves pinnately or palmately divided; flowers small, inflorescence at first enclosed in large deciduous bract (called spathe).

F.137 PANDANACEAE

Flowers unisexual; sepals and petals absent; stamens numerous, filaments often connate; ovary superior, unilocular, usually more or less connate in clusters; stigma sessile, or short and thick style; ovules 1 or numerous; fruit consisting of numerous connate drupes crowded into head; seeds endospermic; trees, shrubs or climbers, mostly with long simple leaves.

F.138 ARACEAE

Flowers uni- or bisexual; sepals and petals 0 or reduced to 2-3 scales; stamens 6 or fewer; anthers sessile or nearly so; ovary superior, 1-3 locular; stigma sessile or nearly so; fruit berry; seeds usually endospermic; herbs expand or climbers; leaves often hastate.

F.139 LEMNACEAE

Flowers unisexual, minute; sepals and petals absent; stamens 1-2; ovary superior, unilocular; style short; ovules 1-7; fruit minute bottle-shaped utricle; seeds 1 or more, endospermic or otherwise; minute floating plants without stems or real leaves, consisting of small leaf-like fronds (cladodes) and multiplying by similar fronds growing out of their edges.

F.140 XYRIDACEAE

Flowers bisexual, slightly zygomorphic; sepals 3, 2 glumaceous, third petaloid; petals 3, united at base; fertile stamens 3, alternating with 3 staminodes; ovary superior, 1-3 locular; style 3-branched; stigma capitate; fruit capsule; seeds numerous, endospermic; tufted perennial herbs; leaves all radical, dry, narrow.

F.141 COMMELINACEAE

Flowers usually bisexual, slightly zygomorphic; sepals 3, thin, but usually green; petals 3, coloured, very deciduous; stamens 3-6, those on one side of flower often reduced to staminodes; ovary superior, ovary 2- or 3-locular; style filiform; stigma capitate; fruit dry, capsule or indehiscent; seeds endospermic, often arillate; herbs; leaves alternate, with sheathing bases.

F.142 ERIOCAULACEAE

Flowers unisexual, minute; sepals and petals 3 each, or fewer, all similar, almost transparent or whitish; stamens usually 3 or 5, ovary superior, 2-3 lobed and 2-3 locular; 1 per loculus; style single with 2 or 3 stigmatic branches; fruit capsule; seed solitary, endospermic; herbs; leaves grass-like.

F.143 FLAGELLARIACEAE

Flowers uni- or bisexual, actinomorphic; sepals and petals 3 each, spreading, all similar, thin, coloured; stamens 6; ovary superior, trilocular; ovule 1 per loculus; fruit drupe, uni- or rarely bilocular; seeds globular, endospermic; leaf-blades often long with a coiled tip and closed leaf sheaths embracing stem.

F.144 RESTIONACEAE

Flowers unisexual (rarely bisexual) actinomorphic; sepals and petals 2-3 each, glumaceous, occasionally much reduced or 0; stamens 1 or 3; anthers usually with 2 instead of 4 pollen-sacs; ovary superior, 1-locular; ovule 1 per loculus; style usually divided to base in as many stigmatic branches as ovule-loculi; fruit, capsule or nut; seeds endospermic; herbs, often rush-like; leaves frequently reduced to sheathing scales with unfused margins.

F.145 CENTROLEPIDACEAE

Flowers bisexual or unisexual; perianth lacking; stamens 1 or rarely 2; ovary collaterally 1-3-locular, or pistils 2 or more and superposed in 1-2 series; ovule 1 per loculus or carpel; fruit small, with membranous pericarp, opening lengthwise; seeds endospermic; small tufted annual or perennial herbs; leaves linear or thread-like, usually crowded.

F.146 JUNCACEAE

Flowers bisexual, actinomorphic; sepals and petals 3 each, all similar and scale-like; stamens 3 or 6; ovary superior, 3-locular; ovules several; style with 3 linear stigmatic branches; fruit capsule; seeds endospermic; herbs tufted or with creeping scaly rhizome; leaves chiefly radical or lacking.

F.147 CYPERACEAE

Flowers bi- or unisexual; sepals and petals 0 or reduced to hypogynous bristles or small scales; stamens 1-6; ovary superior, unilocular, ovule 1; style 1, with 2-3 stigmatic branches; fruit drupe or nut; seed endospermic; grass- or rush-like annual or perennial herbs, usually perennials, with solid, unjointed, often trigonous stems; leaves with a closed sheath and ligule rarely present; flowers in spikelets consisting of several scale-like bracts (called glumes) each with a solitary sessile flower in its axil or lower glumes empty.

F.148 POACEAE

Flowers bi- or unisexual; perianth 0 or reduced to 2-3 scales; stamens 1-6; ovary superior, of 2-3 carpels; ovule 1, laterally attached near base of ovary; fruit achene or caryopsis (seed fused wholly or in part to pericarp); seed endospermic and embryo conspicuously visible through pericarp or abaxial side of fruit; annual or perennial herbs or shrubs; leaves in 2 rows (3 with Micraira) with conspicuous sheathing base and usually an erect ligule at junction of sheath and lamina, exstipulate. The inconspicuous flowers are grouped into 1-several flowered spikelets with each flower supported as a rule by two bracts, upper being the palea and lower the lemma; at base of each spikelet there are usually 2 bracts (glumes); spikelet structures are sometimes difficult to interpret due to flowers or bracts being reduced or 0.

F.149 HYDATELLACEAE

Flowers unisexual; perianth lacking; male flowers a single stamen; female flowers a single pistil; stigma sessile, tuft of hairs; uni locular; ovule 1; fruit an achene or capsule splitting into 2-3 valves; seed with perisperm; annual or perennial tufted herbs; leaves filiform; inflorescence a leafless scape terminating in a cluster of male or female flowers or both subtended by 2-6 hyaline bracts sometimes interpreted as a perianth.

F.150 TYPHACEAE

Flowers unisexual; sepals and petals scale-like or thread-like; stamens usually 3 or fewer, with erect anthers, the pollen-sacs placed back to back, opening in slits; ovary superior, consisting of a single carpel; ovule 1; style short; stigma unilateral; fruit dehiscent; seeds endospermic; reed-like swamp plants; leaves long, linear, scattered.

F.151 ZINGIBERACEAE

Flowers bisexual, zygomorphic; perianth of 3 outer calyx-like segments united into a tube and 3 inner unequal, more or less united corolla-like segments; fertile stamen 1 with a large petaloid staminode opposite and with or without small petaloid staminodes present; ovary inferior trilocular with axile placentas; ovule many; fruit capsule, berry or dry and indehiscent; seeds endospermic mostly arillate; perennial herbs usually aromatic with tuberous rhizomes and 2-ranked sheathing ligulate leaves.

F.152 PHILYDRACEAE

Flowers bisexual, zygomorphic; sepals and petals 2 each, coloured; stamen 1; filament flattened; ovary superior, tri- or unilocular; style simple; stigma terminal; fruit capsule, with numerous seeds; embryo small, enclosed in endosperm; mostly swamp plants, with erect stems; leaves 2-ranked, sword-shaped, equitant.

F.153 PONTEDERIACEAE

Flowers usually unisexual, actinomorphic; perianth of 6 segments, obscurely biseriate, free or basally connate; stamens usually 6, or reduced to 3 or 1, epipetalous, unequal or dissimilar, ovary superior, of 3 fused carpels, trilocular with axile placentas or unilocular with parietal placentas; ovules numerous or 1; fruit trilocular capsule; seeds endospermic; aquatic, mostly perennial herbs, erect or floating; leaves usually in opposite pairs or in whorls of 3-4, with floating or immersed blades, sheathing at base.

F.154 HAEMODORACEAE

Flowers bisexual; perianth of 6 segments in 1-2 series, free or basally connate into tube; stamens 3 or 6, distinct; ovary inferior or half-inferior or nearly superior, of 3 fused carpels, trilocular; ovules 1-numerous; fruit a 3-valved capsule; seeds endospermic; perennial herbs, sap often orange-red sap; leaves alternate, mostly basal, linear, glabrous or very hairy.

F.155 LILIACEAE

Flowers usually bisexual, actinomorphic; sepals 3, usually petaloid; petals 3, occasionally cohering with sepals and indistinguishable from them; stamens 3-6; ovary superior or inferior, 1-3-locular; ovules 1 or numerous per loculus; style entire or trifid; fruit capsule or berry; seeds endospermic, sometimes arillate; herbs or shrubs, often bulbous; leaves basal or cauline, sometimes scale-like, alternate or whorled, sometimes fleshy, margins entire or prickly.

F.156 IRIDACEAE

Flowers bisexual, actinomorphic; sepals 3, petaloid, often fugacious; petals 3, often small; stamens usually 3; ovary inferior, trilocular, with axile placentas; ovules often numerous; style single; stigmas 3, occasionally large and petaloid; fruit capsule; seeds endospermic; perennial herbs, often with thick rhizomes; leaves narrow, keeled, sheathing and laterally flattened at base.

F.157 AGAVACEAE

Flowers bi- or unisexual; actinomorphic, perianth-tube short-rather long; lobes or segments unequal-subequal; stamens 6, epipetalous; ovary superior or inferior, often beaked, trilocular, with axile placentas; style slender; ovules numerous-1 per loculus; fruit capsule or berry; seeds numerous or 1, endospermic; rootstock rhizome; stem short or well developed; leaves usually crowded on or at base of stem, narrow, often thick of fleshy, entire or with prickly teeth on margin.

F.158 XANTHORRHOEACEAE

Flowers bisexual, small; perianth fleshy or petaloid, of 6 segments in 2 whorls, all free or shortly connate; stamens 6, usually 3 inner attached to base of inner segments and

3 outer more or less free; ovary superior, trilocular; styles free or style 3-lobed or subentire; fruit a loculicidal capsule; seeds endospermic; perennials; rootstock a thick woody caudex or rhizome; stem when present sometimes very tall and woody, simple or little-branched; leaves often tufted, mostly linear.

F.159 HANGUANACEAE

Flowers unisexual, actinomorphic; perianth persistent of 6 segments in two similar series; stamens 6, reduced to staminodes in female flowers; ovary superior of 3 fused carpels, trilocular with axile placentas; ovules 3 per locule; style sessile 3-lobed; fruit drupe; seeds endospermic; robust marsh herbs, leaves basal in rosette.

F.160 TACCACEAE

Flowers bisexual; actinomorphic, perianth with short tube and 6 lobes in 2 series; stamens 6, epipetalous; ovary inferior, of 3 fused carpels, unilocular, with 3 parietal placentas; stigmas often petaloid and reflexed over style; ovules numerous; fruit berry; seeds endospermic; perennial herbs with tuberous or creeping rhizome; leaves all radical, large, entire or much lobed.

F.161 STEMONACEAE

Flowers bisexual; perianth segments 4, in 2 series; stamens 4, filaments free or nearly so; ovary superior to semi-inferior, of 2 fused carpels, unilocular; ovules 2-numerous; stigma sessile, pointed; fruit capsule opening by 2 valves; seeds endospermic; perennial twiners with rhizome; leaves alternate, opposite or whorled, with prominent veins.

F.162 SMILACACEAE

Flowers unisexual; perianth segments 6, equal or subequal, free or rarely united into dentate tube; stamens 6, rarely more or fewer; filaments free or united into column; rudimentary ovary 0 in male flowers; ovary superior, sessile, trilocular; ovules 1-2 per loculus; staminodes present in female flowers; fruit berry; seeds endospermic; shrubs, climbing or straggling, often with tendril-like petioles and prickly stems and branches; roots from often stout rhizome; stems leafy; leaves alternate, mostly leathery, 3-nerved, reticulate, veins between nerves.

F.163 DIOSCOREACEAE

Flowers usually unisexual, actinomorphic; sepals petaloid, 3, nearly equal with sepals; stamens 3 or 6; ovary inferior, trilocular; ovules usually 2 per loculus; fruit 3-winged capsule; seeds endospermic; twining herbs or shrubs; leaves broad, with reticulate veinlets between the parallel veins.

F.164 BURMANNIACEAE

Flowers bisexual, actinomorphic; calyx petaloid, 3-lobed, persistent; petals often lacking; stamens short, 3 or 6; ovary inferior, trilocular; ovules numerous; style single, with 3 short stigmatic branches; fruit capsule, opening loculicidally in 3 valves; seeds minute; herbs; leaves usually radical.

F.165 ORCHIDACEAE

Flowers bisexual, usually very zygomorphic; sepals 3, coloured and usually similar to lateral petals; petals 3, adaxial (called labellum) mostly larger and irregularly shaped, usually apparently abaxial, due to rotation of flower; stamens and pistil united in central column; anthers nearly always solitary, attached to apex of column, mostly 4 pollen-sacs; pollen aggregated into 1, 2, or 4 pairs of masses, free or attached by narrow end, either directly or by linear filiform caudicle, to gland on rostellum; stigma placed below anthers on column, upper margin usually produced into erect appendage (called rostellum); ovary inferior, usually unilocular, with 3 parietal placentas; fruit dry, opening longitudinally; seeds minute, without endosperm; terrestrial or epiphytical perennials; stems frequently thickened into pseudo-bulbs; leaves alternate and sheathing at base, or radical.

GLOSSARY OF TECHNICAL TERMS

Abaxial, opposite of adaxial.

Achene, a dry but not woody indehiscent single-seeded fruit.

Actinomorphic, radially symmetrical, especially of corolla.

Adaxial, leaf surface or floral organ nearest to the axis from which it arises.

Alternate, (of leaves) neither opposite nor whorled on the stem.

Androecium, pollen bearing organs of flower.

Androgynous, when male and female flowers are found in the one inflorescence.

Annual, completing life-cycle within one year.

Anther, organ in which pollen is produced (Fig. 1a.).

Anthocarp, a fruit plus the persistent base of its surrounding perianth.

Apocarpous, (of a pistil or gynoecium) consisting of one carpel, or of several carpels each free and distinct, as in Ranunculaceae, Dilleniaceae.

Appendage, an outgrowth from any organ.

Aril, a fleshy appendage to a seed.

Arillate, possessing an aril.

Axil, the angle formed between a leaf and a branch.

Axile, of ovules attached to the central axis of a plurilocular ovary (Fig. 1b.).

Basal, of ovules attached to the base of the ovary (Fig. 1a).

Berry, a fleshy fruit lacking a wooden endocarp.

Bisexual, of flowers possessing both pistils and stamens.

Boragoid inflorescence, one in which all the flowers are on the one (upper) side of a rachis, which is coiled when young, but straightens out as the flowers open.

Bract, a small leaf at the base of a peduncle or pedicel, and differing from the other leaves in size or shape.

Bracteole, a scale or leaf-like appendage borne on same axis as the flower, or on the calyx.

Caducous, falling off very early.

Calyx, outer whorl of a flower with a double perianth.

Capitate, shaped like a head, usually of stigmas or inflorescences.

Capsule, a fruit consisting of two or more fused carpels and which dehisces either by splitting into pieces called valves or by opening apically by teeth or pores.

Carpel, a hypothetical ovule-bearing leaf folded lengthwise and united by its edges. The lower and swollen portion forms the ovary, inside which the ovules are produced; the upper and narrower portion forms the style and stigma.

Caudicle, a strap-like structure connecting the pollen masses of orchids to the rostellum.

Climber, a plant rooted in the ground but supported by other plants.

Column, a fusion of the stamens into a tube or fusion of the stamens and style into a solid body.

Compound, (of leaves) possessing several leaflets.

Connate, of parts so united they can only be separated by tearing.

Confluent, blending.

Connective, tissue joining anthers to one another.

Connivent, coming into contact, but not united.

Corolla, inner whorl of a flower with double perianth (Fig. 1a., 1b.).

Crustaceous, dry and brittle.

Dichotomous, divided equally into two portions.

Distichous, of alternate leaves arranged one above the other on the axis in two opposite rows.

Drupe, a fruit in which the pericarp consists of three layers: (1) the epicarp or skin; (2) the mesocarp a usually fleshy but sometimes fibrous layer; (3) the wooden endocarp or stone surrounding each seed. There may be one seed as with the mango or several as with coffee.

Eligulate, without a ligule.

Emarginate, notched at the apex.

Endospermic, of seeds possessing a conspicuous food reserve outside the embryo.

Epigynous, when the sepals, petals, and stamens are inserted upon the inferior ovary and the adnate torus or receptacle.

Epipetalous, of stamens attached to the corolla-tube (Fig. 1b.).

Epiphyllous, attached to a perianth-tube.

Equitant, of distichous leaves folded longitudinally and overlapping at their bases.

Exstipulate, without stipules.

Filament, stalk of stamen (Fig. 1a.).

Filiform, thread-like.

Free, not fused.

Gamopetalous, of petals fused at the base (Fig. 1b.).

Gamophyllous, perianth members or sepals fused at base.

Glabrous, smooth, without hairs.

Glumaceous, glume-like.

Glume, bract enclosing a flower or spikelet, especially in Cyperaceae and Poaceae.

Gynandrous, androecium and gynoecium fused into a single structure.

Gynobasic, style arising from base instead of ovary apex, as in Lamiaceae and Boraginaceae.

Gynoecium, seed bearing organ or organs of the flower.

Heterostylic, of species whose flowers have two or more forms with respect to their stamen and style lengths.

Hypogynous, arising below the ovary.

Imbricate, overlapping.

Indumentum, the entire covering of hairs, etc.

Indusium, a cup-shaped or two-lipped dilatation with a narrow opening at the end of the style, enclosing the stigma.

Inferior, of flowers with floral members arising above the ovary.

Inflorescence, a collective term for the flowering parts, including the main axis, its branches, bracts, and flowers.

Involucre, a number of bracts surrounding the base of a flowerhead or of an umbel.

Latex, the milky juice of certain plants, e.g. fig or pawpaw.

Lianes, woody climbers.

Ligulate, strap-shaped.

ligule, membranous or ciliate structure on adaxial leaf surface adjacent to sheath.

Loculicidal, of a mature capsule splitting along its outer locule wall.

Loculus, a cavity bearing ovules (ovary), or pollen (anther), (Fig. 1b.).

Monadelphous, having the stamen filaments united into a single set.

Node, place on stem where one or more leaves arise.

Nut, a one-seeded, indehiscent fruit with a hard dry pericarp.

Nutlet, small nut.

Ochrea, sheathing leaf-base of members of Polygonaceae, possible a pair of fused stipules.

Opposite, where two organs arise from the same node.

Ovary, of part of the gynoecium which encloses the ovules (Fig. 1b.).

Ovule, that which after fertilization develops into the seed (Fig. 1a., 1b.).

Palmate, divided fan-wise or like the fingers of a flattened hand.

Panicle, an inflorescence whose axis is divided into branches each bearing one or more flowers.

Parietal, placentation in which two or more placentas develop on the wall of a uniloculate ovary.

Pedicel, stalk of a flower (Fig. 1a.).

Peltate, circular structure with axis inserted at or near the middle of the lower surface.

Penicillate, like a tuft of hairs, as seen in *Urtica* (nettle), where the stigma consists of a number of hair-like branches.

Perennial, with a life-cycle of more than two years and usually flowering every year.

Perianth, the floral envelope, usually consisting of two whorls, the calyx and corolla; the term is specially employed to describe flowers in which the segments of the perianth are much alike but in whorls, as in Liliaceae and Juncaceae, or quite similar and in a single whorl, as in Chenopodiaceae.

Perigynous, when the sepals, petals, and stamens are inserted round the superior ovary on the cup-like or tubular torus or receptable; the stamens also appear perigynous when inserted on the corolla.

Perispermic, as for endospermic but food reserve of the seed derived principally from nucellar tissue rather than the embryo sac.

Persistent, of floral parts not shed after flowering.

Petal, a member of the corolla (Fig. 1a.).

Petaloid, having the appearance of a petal.

Placenta, tissue from which ovules arise.

Placentation, arrangement of ovules on the placenta (Fig. 1a., 1b.).

Plumose, covered with long, feathery hairs.

Polygamous, bearing male, female, and bisexual flowers on the same plant.

Polypetalous, corolla of several free petals (Fig. 1a.).

Polyphyllous, with perianth or petals and sepals arising separately from the axis; many leaved.

Raceme, an inflorescence consisting of an unbranched axis bearing stalked flowers.

Radical, leaves arranged in a rosette and arising apparently directly from the root.

Receptacle, the part of the floral axis bearing the floral organs (Fig. 1a.).

Reniform, kidney-shaped.

Reticulate, when the nerves or veins cross each other like the meshes of a net.

Rostellum, the extension of the upper edge of the stigma in orchids.

Samara, dry indehiscent fruit with a membranous wing at one end.

Scarious, thin, dry membranous, not green.

Schizocarp, a dry fruit which at maturity splits into several often one-seeded portions.

Sepal, a member of the calyx (Fig. 1a, 1b.).

Sepaloid, having the appearance of sepals.

Septicidal, of a mature capsule splitting along its septum walls.

Septum, a wall dividing an ovary into locules.

Serrate, toothed like a saw.

Sessile, without any stalk.

simple, with respect to leaves possessing a single leaf blade which may be deeply dissected but not divided into separate leaflets.

Spadix, a spike with flowers more or less sunk in tissue, usually enclosed in a spathe of one or more than one large leaves as with Araceae and Piperaceae.

Spike, an inflorescence consisting of undivided floral axis, bearing sessile flowers.

Stamen, pollen bearing organ, usually comprising a stalk and anther (Fig.1a.).

Staminode, a stamen-like structure lacking anthers.

Stigma, the area receptive to pollen at or near the distal end of the style (Fig. 1a.).

Stipitate, provided with a special stipe or stalk.

Stipules, two small appendages growing at the base of the leaf-stalk.

Style, that part of the gynoecium connecting the stigma with the ovary (Fig.1a.).

Succulent, fleshy in texture.

Superior, of flowers with floral members arising below the ovary (Fig. 1a.).

Syncarpous, an ovary, pistil, or fruit composed of two or more united carpels (Fig. 1b.).

Syngenesious, fused to one another as with the anthers of the Asteraceae.

Tendrils, filiform organs by which climbing plants cling to some object within reach, arising by modification of stipules, leaflets or sterilization of inflorescence branches.

Terminal, at the apex.

Tetradynamous, with six stamens, two outer shorter than four inner, as in Brassicaceae.

Torus, part of floral axis from which arise the sepals, petals, stamens and pistil, also known as receptacle.

Twiner, a plant rooted in the ground and climbing primarily by twisting of the stem apices.

Umbel, inflorescence where the divergent branches or rays start from the same point; in a simple umbel each ray bears one flower.

Unilocular, with a single cavity, usually of the ovary.

Unisexual, flowers with pistils or stamens only.

United, joined together, in whole or in part.

Venation, the disposition of veins, especially in a leaf.

Viscid, sticky.

Whorl, where three or more organs arise from the same node.

Zygomorphic, bilaterally symmetrical, especially in reference to the corolla.

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